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per square mile. Hindus number 26,371 and Animists 11,745. The population consists chiefly of aborigines, the most numerous tribes being Bhuiyās, Gonds, Hos, Khariās, Mundās, and Pāns. The Bhuiyās and Gonds are the most influential classes; they have always shown a very independent attitude towards the Rājā, and within the last thirty years one rebellion of the Bhuiyās and two of the Gonds have taken place. The headman of the Bhuiyās, who is called *saont*, claims the prerogative of bestowing on the Rājā the *tīka* or sign of investiture, a claim which is, however, not recognized by the chief. The two headmen or leaders of the Gonds are respectively called *mahāpātra* and *dandpāt*. The *saont*, the *mahāpātra*, and the *dandpāt* are the only three fief-holders or sub-proprietors under the Rājā, each possessing several villages and having to render military service to the Rājā if required, besides paying a fixed yearly rental. There is some immigration of Kols, Mundās, and Oraons from Singhbhūm, and of Kaltuyās (Kolthās) and Agariās from Sambalpur. These tribes take leases of jungle-clad tracts and reclaim them, and the area under cultivation is thus being rapidly extended. The Kaltuyā settlers, who are mostly paid labourers under the Bhuiyās, are very industrious and intelligent cultivators; in some places they bank up the hill streams and utilize for irrigation the water thereby stored up. Rice is the staple product; three successive crops are grown in the year—the *gorādhān* or the earliest highland autumn rice, the ordinary autumn crop, and the winter rice. Among the minor crops are pulses, maize, and oilseeds; castor-oil plants and sugar-cane are largely grown on homestead lands; and cotton is also extensively cultivated. Pasturage is plentiful. Bonai possesses large forests, full of valuable trees, such as *sāl* (*Shorea robusta*), *āsan* (*Terminalia tomentosa*), *piāsāl* (*Pterocarpus Marsupium*), *sissū* (*Dalbergia Sissoo*), and *kusum* (*Schleichera trijuga*). Since these have been made accessible by the opening of the Bengal-Nāgpur Railway, they have formed a valuable source of income to the State. Minor forest products of value are lac, *tasar* cocoons, and *sabai* grass (*Ischoemum angustifolium*). Gold is found in small quantities in the bed and banks of the Brāhmanī; the sand is washed by Jhorā Gonds, but their daily earnings range only from 2 to 4 annas. In 1896 the Bengal Gold and Silver Company took a prospecting lease from the Rājā for three years, paying a premium of Rs. 25,000, but the enterprise was abandoned as unprofitable. Iron is found, but is extracted only for local use. Brass pots and ornaments, pots of a soft black stone, and coarse cotton cloths are manufactured, but in quantities hardly sufficient to meet the local demand. The chief imports are European cotton fabrics, salt, kerosene oil, machine-made thread, and tobacco; and the chief exports are oilseeds, hides, horns, lac, *tasar* cocoons, timber, *ghī*, *sabai* grass, and wax. These articles are carried to the railway on pack-bullocks or by

coolies; for want of good roads, carts are seldom used. An unmetalled and unbridged road connects Bonaigarh with Raurkelā station on the Bengal-Nāgpur Railway, a distance of about 45 miles.

The police force consists of 6 officers and 27 men, besides a body of village *chaukīdārs* and *goraits*. A dispensary is maintained by the State at Bonaigarh, and at the same place there is a jail with accommodation for 50 prisoners. The State also maintains eleven lower primary schools.

Bonaigarh.—Head-quarters of Bonai State, Bengal, situated in 21° 49′ N. and 84° 58′ E. Population (1901), 1,850. Bonaigarh, which contains the residence of the Rājā, a dispensary, and a jail, is surrounded on three sides by the Brāhmaṇī river, and is further defended by a high mud wall and moat. It is connected by an unbridged and unmetalled road about 45 miles in length with Raurkelā station on the Bengal-Nāgpur Railway. The site, which is very picturesque, is 505 feet above sea-level.

Bongong.—Subdivision and village in Jessore District, Bengal. *See* BANGAON.

Boondee.—State and capital thereof in Rājputāna. *See* BŪNDI.

Boondelcund.—Historic area in the United Provinces and Central India. *See* BUNDELKHAND.

Borām.—Village in the head-quarters subdivision of Mānbhūm District, Bengal, situated in 23° 22′ N. and 86° 8′ E. It is noteworthy on account of the Jain remains in the neighbourhood, on the right bank of the Kāsai river. Amid heaps of débris and ruins stand three fine brick temples. The tower of the largest rises from a base of 26 feet square to a height of (at present) about 60 feet; the upper portion has fallen, but the proportions in other temples of the same type suggest that the original building must have been about one-third higher than the present ruins. The chamber occupies only 9 square feet; the images have been removed. The bricks of which these temples are made are beautifully fashioned, and appear to have been finished by grinding. In this respect, and in their style of ornament and workmanship, these temples resemble the great Buddhist temple of Buddh Gayā in Bihār.

[*Archaeological Survey Report*, vol. viii, pp. 184–6.]

Borgaon.—Village in the Vālva *tāluka* of Sātāra District, Bombay, situated in 17° 5′ N. and 74° 23′ E., 5½ miles north-east of Islāmpur and 5 miles north-west of Vālva. Population (1901), 5,498. It is a large agricultural village on the right bank of the Kistna. To the north, adjoining the river, is an interesting modern temple with round-arched cloisters of brick covered with mortar. The land in the neighbourhood includes some of the finest Kistna valley black soil.

Borgaon.—Village in the Chikodi *tāluka* of Belgaum District,

Bombay, situated in 16° 35′ N. and 74° 33′ E. Population (1901), 5,495. The village is purely agricultural, and contains a boys' school with 77 pupils.

Borghāt.—Pass across the Western Ghāts in Poona District, Bombay, 40 miles south-east of Bombay, and about the same distance north-west of Poona, situated in 18° 47′ N. and 73° 21′ E. The summit is 1,831 feet above the level at its base, or 2,027 feet above the sea. The south-east line of the Great Indian Peninsula Railway here climbs the Ghāts from the Konkan to the Deccan. The average gradient is 1 in 48. The total length of tunnelling is 2,535 yards. There are 8 viaducts, varying from 52 to 168 yards in length, and from 45 to 139 feet in height. The total quantity of cuttings was 1,623,102 cubic yards, and of embankments 1,849,934 cubic yards. The maximum height of the embankments is 74 feet. There are 18 bridges of various spans from 7 to 30 feet, and 58 culverts of from 2 to 6 feet span. The estimated cost of the work was 60 lakhs, or an average of 4 lakhs per mile. It was completed in February, 1861, within five years from the date of its commencement.

In former times the Borghāt was considered the key of the Deccan. In 1804 General Wellesley gave Bombay greater facilities of access to the Deccan by making the Borghāt practicable for artillery, and constructed a good road from the top of the *ghāt* to Poona. A good carriage road up the *ghāt* was not, however, completed until 1830, when it was opened by Sir John Malcolm, then Governor of Bombay. 'On the 10th of November, 1830,' he wrote, 'I opened the Borghāt, which, though not quite completed, was sufficiently advanced to enable me to drive down with a party of gentlemen in several carriages. It is impossible for me to give a correct idea of this splendid work, which may be said to break down the wall between the Konkan and the Deccan. It will give facility to commerce, be of the greatest convenience to troops and travellers, and lessen the expense of European and other articles to all who reside in the Deccan.' Thirty years afterwards another Governor of Bombay, Sir Bartle Frere, at the opening of the Borghāt railway incline, which reaches by one long lift of $15\frac{1}{2}$ miles the height of 1,831 feet, recalled Sir John Malcolm's words and said: 'When I first saw the *ghāt* some years later, we were very proud in Bombay of our mail-cart to Poona, the first, and at that time, I believe, the only one running in India; but it was some years later before the road was generally used for wheeled carriages. I remember that we met hardly a single cart between Khandāla and Poona; long droves of pack-bullocks had still exclusive possession of the road, and probably more carts now pass up and down the *ghāt* in a week than were then to be seen on it in a whole year. But the days of mail and bullock-carts, as well as of pack-bullocks, are now drawing to a close.' Bullock-carts,

however, still continue to do a fair business in spite of the completion of the railway.

Bori.—Subdivision and *tahsīl* of Loralai District, Baluchistān, lying between 30° 18′ and 30° 48′ N. and 67° 42′ and 69° 45′ E., with an area of 2,072 square miles and a population (1901) of 18,174, an increase of 6,396 since 1891. The head-quarters are at LORALAI town (population, 3,561). The villages number 128. The land revenue amounted in 1903–4 to Rs. 61,000. Bori consists of a long valley, forming the catchment area of two branches of the Anambār river. It has rich soil and is well cultivated, and fine orchards are to be seen in some of the villages. The majority of the people are agriculturists. Among the Sargara Kākars of Dirgi a curious custom exists of allotting a share of land to every married woman at periodical distributions.

Borivli.—Village in the Salsette *tāluka* of Thāna District, Bombay, situated in 19° 14′ N. and 72° 51′ E., on the Bombay, Baroda, and Central India Railway, about 22 miles north of Bombay. Population (1901), 182. Borivli is a convenient centre for visiting several places of interest. The Kānheri caves lie up the Tulsī valley about five miles to the east. At Mandapeshvar, called Monpezier or Monpaçer by the Portuguese, about 2 miles north of Borivli, are situated a notable white Portuguese watch-tower, and a set of Brāhmanic caves, over a thousand years old, one of the latter being specially interesting from having been used as a Catholic chapel. On the top of the rock in which the caves are cut stands a large and high-roofed Portuguese cathedral, lately repaired, and extensive ruined buildings belonging to a college and monastery. In a mango orchard, at Eksar, in rich wooded country about a quarter of a mile south of Mandapeshvar and a mile north-west of Borivli, are six great blocks of stone about 8 feet high by 3 feet broad. They are memorial stones richly carved with belts of small figures, the record of sea- and land-fights probably of the eleventh and twelfth centuries. About half a mile to the east of Borivli station, close to the border-lands of Poinsar and the deserted village of Māgāthan, are some Buddhist rock-cut cisterns and some half-underground Buddhist caves. A few hundred yards to the east lie some Buddhist tombs and the remains of a Buddhist monastery, probably of the fifth or sixth century. At Akurli, about 2 miles to the south-east, in rugged bush-land, rises a large mound of black trap, on the top of which are some quaint rough carvings and Pāli letters, perhaps two thousand years old. Two miles farther south, in thickly wooded uplands, is the great JOGESHVARI cave, a Brāhmanic work probably of the seventh century. The railway can be joined at Goregaon station, which is about 3 miles north-west of the Jogeshvari cave.

Borkhera.—*Thakurāt* in the MĀLWĀ AGENCY, Central India.

Borsad Tāluka.—Southern *tāluka* of Kaira District, Bombay,

lying between 22° 14′ and 22° 33′ N. and 72° 39′ and 73° 5′ E., with an area of 204 square miles. It contains one town, BORSAD (population, 13,001), the head-quarters, and 92 villages. Population in 1901 was 137,889, compared with 162,143 in 1891. It is the most thickly populated *tāluka* in the District, with a density of 673 persons per square mile. The land revenue and cesses amounted in 1903–4 to nearly 4·2 lakhs. Owing to its intersection by Baroda and Cambay territory, the *tāluka* is very broken and irregular in shape. The Mahī is the only river. It flows along the southern boundary, and is throughout the whole distance tidal; but the shallowness of its channel, its shifting sand-banks, and the force of its tidal wave, make it useless for boats. Except in the south, along the banks of the Mahī, the whole is a highly cultivated plain sloping gently westwards, intersected by rich hedgerows and adorned by groves of magnificent trees. The water-supply is good.

Borsad Town.—Head-quarters of the *tāluka* of the same name in Ḳaira District, Bombay, situated in 22° 25′ N. and 72° 54′ E. Population (1901), 13,001. The town is protected by a double line of fortifications, the outer of which is in disrepair, the inner in fair preservation. These fortifications are modern, having been constructed by Rangoji, a Marāthā leader, who fixed his head-quarters here in 1741. The fort was constantly the scene of fighting till 1748, when, after a siege of five months, the Gaikwār captured the town and made Rangoji prisoner. Borsad is the seat of a Presbyterian mission. Since 1889 it has been a municipal town with an average income, during the decade ending 1901, of Rs. 8,000. In 1903–4 its income was Rs. 12,000, including grants for education. A well, built in 1497, with 7 storeys and 13 arches, is of archaeological interest. The town contains a Sub-Judge's court, a dispensary, and 9 schools (6 for boys and 3 for girls) with 783 and 298 pupils respectively, including an English mission school, belonging to the Irish Presbyterians, with 64 pupils.

Botād.—Fortified town in the State of Bhaunagar, Kāthiāwār, Bombay, situated in 22° 10′ N. and 71° 42′ E., on the Bhavnagar-Wadhwān Railway. Population (1901), 8,857. The town is said to have been founded by the Jhālās of Kondh, a branch of the Dhrāngadhra family. At no great distance is the shrine and tomb of the Musalmān saint Pīr Hamīr Khān. The Botād traders are rich and enterprising, and include many wealthy bankers. Near the Sātpurā hills not far from the town is a fine reservoir known as the Phātsar. There is one ginning factory at Botād.

Bowringpet.—South-eastern *talūk* of Kolār District, Mysore, lying between 12° 46′ and 13° 5′ N. and 78° 6′ and 78° 29′ E., with an area of 337 square miles. The population in 1901 was 128,193, compared with 71,042 in 1891. The *tāluk* contains two towns, KOLĀR GOLD FIELDS (population 38,204), and Bowringpet (2,893), the head-quarters;

and 409 villages. The land revenue demand in 1903-4 was Rs. 1,38,000. The Pālār river runs through the east, forming the large Betmangala and Rāmasāgara tanks. The west is crossed from north to south by the low flat hills of the Kolār auriferous band, west of which is a stream running south to the Ponnaiyār. The southern border abuts upon the Eastern Ghāts, and is rugged and jungly. The entire aspect of the region has been changed, especially since 1885, by the success of the gold-mines, and what was a desolate waste has become a great industrial centre.

Boya.—Village in the Daur valley in the Northern Wazīristān Agency, North-West Frontier Province, lying in 32° 57′ N. and 69° 57′ E., on the right bank of the Tochi river at an elevation of 3,600 feet. It contains 62 houses of the Boya Khel Tappizād Dauris, and is garrisoned by the Northern Wazīristān militia.

Brahmagiri.—Hill in the Molakālmuru *tāluk* of Chitaldroog District, Mysore, situated in 14° 48′ N. and 76° 49′ E. Here, in 1892, were discovered Asoka edicts engraved on a great boulder. Isila, to the authorities of which they are addressed, may be the 'Sidda-' of Siddapura, the village close by on the west. A fort on the hill, called Hāneyakote, was held by the Chola chiefs of Nidugal, when it was taken by the Hoysala king Ballāla at the end of the twelfth century.

Brahmagiri Range[1].—A range of mountains in Southern India, forming the south boundary of Coorg and separating it from the Wynaad. They are also known as the Marenād range. Brahmagiri or Davasibetta, the highest point, is 4,500 feet above the sea, and the source of the Lakshmantīrtha river.

Brahmakund.—A deep pool in the Brahmaputra on the eastern border of Lakhimpur District, Eastern Bengal and Assam, situated in 27° 51′ N. and 96° 23′ E. Parasu Rāma, one of the ten incarnations of Vishnu, is said to have surrendered at this pool the axe with which he destroyed the Kshattriyas, and it is in consequence visited by Hindu pilgrims from every part of India. The pool is situated at the place where the river emerges from the mountains, and is surrounded on every side by hills. The journey from Sadiyā takes four or five days for ordinary travellers, but is not attended by any risk. The return journey down stream can be completed in two days.

Brāhmanābād (*Bumbra-ke-Thul*).—Ruined city in the Sinjhoro *tāluka* of Thar and Pārkar District, Sind, Bombay, situated in 25° 52′ N. and 68° 52′ E., about 11 miles south-east of Shāhdādpur in Hyderābād, and 21 miles from Hāla. It once stood on the old course of the Indus, and was strongly fortified. Outlying suburbs connected it with the cities of Depur and Dalārī—the former the royal,

[1] Brahmagiri is also the name of the peak in the Western Ghāts from which the river Cauvery takes its rise.

the latter the official quarter, Brāhmanābād itself being the commercial centre. The ruins of its fortifications measure 4 miles in circumference. Excavations prove that the inhabitants had attained to great skill in the arts, for the sculptures, engraved gems, carved ivory, earthenware, and coloured glass found among the ruins show both advanced taste and workmanship; while the arrangement and regularity of the streets and the solid proportions of the buildings attest great architectural excellence. Legends say that the city was founded prior to the seventh century, and was destroyed by the gods in punishment for the iniquities of 'King Dolora.' History so far confirms this tradition as to make mention of an unjust ruler, by name Dolora Amrāni, in the eleventh century. That the destruction of the city was as sudden as it was complete is proved by the discovery of whole households overwhelmed together, men and women at their work, and cattle in their stalls. No marks of conflagration are discernible, nor—since household goods and valuables remain *in situ*—can the ruin of the city be referred to the invasion of an enemy or desertion by the inhabitants. The legend, therefore, is probably so far correct that Brāhmanābād was destroyed by natural agency—most probably by the earthquake which about the same time diverted the course of the Indus.

[*Journal of the Bombay Branch of the Royal Asiatic Society*, vol. v, 1857), 'An Account of the Ancient and Ruined City of Brāhmanābād in Sind,' by A. F. Bellasis; *Annual Report of the Archaeological Survey of India* (1903–4), 'Brāhmanābād—Mansūra in Sind,' by H. Cousens.

Brāhmanbāria Subdivision.—Subdivision in the north of Tippera District, Eastern Bengal and Assam, lying between 23° 36′ and 24° 16′ N. and 90° 43′ and 91° 20′ E., with an area of 769 square miles. The subdivision is an alluvial tract, laid out for the most part in well-cultivated fields; but to the east the country is more undulating, and contains a number of low hills covered with scrub-wood. In 1901 the population was 677,084, compared with 590,097 in 1891. The density was 880 persons per square mile, which exceeds the average for the District. The subdivision contains one town, BRĀHMANBĀRIA (19,915), the head-quarters; and 1,319 villages.

Brāhmanbāria Town.—Head-quarters of the subdivision of the same name in Tippera District, Eastern Bengal and Assam, situated in 23° 59′ N. and 91° 7′ E., on the north bank of the Titās river. Population (1901), 19,915. Brāhmanbāria was constituted a municipality in 1868. The income during the decade ending 1901–2 averaged Rs. 8,000, and the expenditure Rs. 7,000. In 1903–4 the income was Rs. 9,000, mainly derived from a tax on persons (or property tax); and the expenditure was Rs. 8,000. Brāhmanbāria is connected by steamer with the Assam-Bengal Railway at Akhaurā,

and a considerable trade in rice and jute passes through it to Bhairab Bāzār in Mymensingh District.

Brāhmanī.—River of Bengal, formed by the junction of the South Koel and the Sānkh rivers in Gāngpur State, Orissa, in 22° 15′ N. and 84° 47′ E. The united stream, assuming the name of Brāhmanī, passes through the Orissa Tributary States of Bonai, Tālcher, and Dhenkānāl, and enters Cuttack District near Garh Balarāmpur. It then follows a very winding easterly course, and reaches the Bay of Bengal by two mouths, the DHĀMRA estuary and the Maipāra river, in 20° 47′ N. and 86° 58′ E., after a length of 260 miles. The principal branch of the Brāhmanī is the Kimiriā, which takes off on its right bank opposite Rājendrapur village in Cuttack District, and, after mixing its waters with the Gengutī, Kelo, and Birūpā (the last an offshoot of the Mahānadī), falls again into the parent stream at Indpur under the name of the Birūpā. As it approaches the sea the Brāhmanī receives on its left bank the Kharsuā, and a short distance below this point its waters unite with those of the BAITARANĪ, forming the Dhāmra. The confluence of the South Koel and the Sānkh, which marks the point of origin of the Brāhmanī, is the prettiest spot in Gāngpur State, and is said by local tradition to be the scene of the amour of the sage Parāsara with the fisherman's daughter Matsya Gandhā, who became the mother of Vyāsa, the reputed compiler of the Vedas and the Mahābhārata. The Brāhmanī is crossed by the Orissa High-level Canal, which derives from it a portion of its water-supply, and is spanned by a fine bridge on the Bengal-Nāgpur Railway.

Brahmapurī.—*Tahsīl* in Chānda District, Central Provinces. *See* BRAMHAPURĪ.

Brahmapuri.—Village in the Pandharpur *tāluka* of Sholāpur District, Bombay, situated in 17° 34′ N. and 75° 34′ E., on the Bhīma, about 16 miles south-east of Pandharpur town. Population (1901), 1,274. Brahmapuri has an old temple of Siddheswar enclosed in a paved court. In 1695 Aurangzeb, annoyed at the continued Marāthā raids in the North Deccan, encamped with his grand army at Brahmapuri, where he established his chief store, built a cantonment, and held his court. From Brahmapuri the operations of his armies and the affairs of his empire were directed for five years. In 1700 the Brahmapuri cantonment was vacated, and Aurangzeb marched to Sātāra.

Brahmaputra ('Son of Brahmā').—River of Tibet and North-eastern India, which for its size and utility to man ranks among the most important in the world. Its total estimated length is about 1,800 miles, and its drainage area about 361,200 square miles, while during the rains the flood discharge at Goālpāra is said to be more than half a million cubic feet of water per second. An element of

romance hangs over the river, as a certain portion of its course has never been actually explored, though there is little doubt that the Tsan-po, or great river of Tibet, pours its waters through the DIHĀNG into the river which is known as the Brahmaputra in the Assam Valley. The source of the Tsan-po is in 31° 30′ N. and 82° E., near the upper waters of the Indus and the Sutlej, and a little to the east of the Mānasarowar Lake. It has been traced almost continuously for a distance of 850 miles eastwards to Gya-la-Sindong, which is barely 150 miles from the Assam frontier, but no explorer has yet succeeded in following the river right down to its junction with the Brahmaputra. It was at one time thought that the Tsan-po might be identical with the great river of Burma, the Irrawaddy, but explorations which terminated in 1882 proved that the course of the Tsan-po could not lie east of a place called Samā in the Zayul valley. It was then suggested that the river that flowed past Samā was not identical with the stream that runs westward from the Brahmakund to Sadiyā, but was a tributary of the Tsan-po, which flowed to the west of Samā into the plains of Burma. This theory was completely disproved by the explorations of Mr. Needham, who in 1885–6 marched from Sadiyā up the so-called Brahmaputra to Rimā, a village east of Samā, and proved that the river at Rimā and the river that flowed past Sadiyā were the same. The Tsan-po having no outlet towards Burma in any direction, there is little room for doubt with regard to its identity with the Brahmaputra. Granted this premise, it seems probable that the channel by which it makes its way through the Himālayas is the Dihāng, which is by far the largest river that falls into the Brahmaputra from the north, and at the point of junction considerably exceeds in volume the river flowing from the east, which, as it follows the same direction as the united stream in its passage down the valley, has been wrongly styled the Brahmaputra by the Assamese. In 1886–7 the Tsan-po was visited by a native explorer, who stated that he followed its course for nearly 100 miles south of Gya-la-Sindong to a place called Onlet, which is only 8 miles from Mīri Padam and 43 miles from the Assam frontier. At first sight, it may seem strange that a geographical problem of such interest as the identity of the Tsan-po and the Dihāng should still remain unsettled, and that such a small strip of territory should be allowed to remain unexplored. The hills through which the Dihāng makes its way present, however, great difficulties to the explorer, and are inhabited by fierce and hostile tribes of whom little is known. Activity in that region is politically undesirable; and even if no opposition was offered to the expedition, it is possible that an advance and subsequent retirement would be construed into a sign of weakness, which might embolden the hill tribes to make incursions on the frontier of Assam.

The Dihāng at Pobha joins a river flowing from the east, which is sometimes styled the Brahmaputra, sometimes the Luhit. This river rises to the north-east of the hills inhabited by the Mishmis, and is known at Rimā as the Zayul Chu. Near Sadiyā, shortly above its junction with the Dihāng, it receives the NOA DIHING from the southern, and the DIBĀNG and Sesseri from the northern bank. The most important tributaries that fall into the river west of the Dihāng are: on the north bank, the SUBANSIRĪ, BHARELI, DHANSIRI, BARNADĪ, MANĀS, SANKOSH, DHARLĀ, and TĪSTA; and on the south bank the BURHI DIHING, DISĀNG, DIKHO, JHĀNZI, DHANSIRI KULSI, and JINJIRĀM.

Below Dibrugarh the Brahmaputra at once assumes the characteristics by which it is generally known. It rolls along through the plain with a vast expanse of water, broken by innumerable islands, and exhibiting the operations of alluvion and diluvion on a gigantic scale. It is so heavily freighted with suspended matter that the least impediment in its stream causes a deposit, and may give rise to a wide-spreading almond-shaped sand-bank. On either side, the great river throws out large branches, which rejoin the main channel after a divergence of many miles. One of these divergent channels takes off from the main stream, under the name of the Kherkutiā Suti, opposite Burhi Dihingmukh. It receives the great volume of the Subansirī, and is then called the Luhit, and thus reinforced, rejoins the main stream nearly opposite Dhansirimukh. The great island or *char* of MĀJULI, with an area of 485 square miles, is enclosed between it and the main stream. Another large divergent channel is the KALANG, which takes off from the south bank opposite Bishnāth in Darrang District, and traverses the whole of Nowgong District west of that point, rejoining the Brahmaputra a short distance above Gauhāti.

Unlike many rivers that flow through flat low-lying plains, instead of creeping along in a sluggish channel, the Brahmaputra in the Assam Valley has a comparatively swift current, and possesses no high permanent banks. At certain points in its course it passes between or by rocky eminences, which give a temporary fixity to its channel, as at Bishnāth, Silghāt, Tezpur, Singriparbat, Gauhāti, Hāthimurā, Goālpāra, and Dhubri. Where not so controlled, it sends its shifting channels over a vast extent of country, without forming any single continuous river trough.

After a course of 450 miles south-west down the Assam Valley, the Brahmaputra sweeps southward round the spurs of the Gāro Hills, which form the outwork of the watershed separating it from the river system of the Surmā in Sylhet. It enters Rangpur District in 25° 47′ N. and 89° 49′ E., and its southerly course con-

tinues thence for about 148 miles, under the name of the JAMUNĀ, through the open plains of Eastern Bengal, as far as its confluence with the Padmā, or main stream of the GANGES, at Goalundo in 23° 51′ N. and 89° 46′ E. The united rivers subsequently join the MEGHNĀ estuary opposite Chāndpur, in 23° 13′ N. and 90° 33′ E. The main stream of the Brahmaputra formerly flowed south-east across the centre of Mymensingh District, and, after discharging its silt into the Sylhet swamps and receiving the SURMĀ, united directly with the Meghnā. This is the course shown on the maps of Rennell's survey of 1785; and it was not till the beginning of the nineteenth century that, having raised its bed and lost its velocity, the river was no longer able to hold its own against the Meghnā, and, being forced to find another outlet for its banked-up waters, suddenly broke westwards and joined the Ganges near Goalundo. The old bed still retains its name, but has been steadily silting up, a process which was expedited by the great earthquake of 1897. The entire lower portion of the Brahmaputra may be described as an elaborate network of interlacing channels, many of which run dry in the cold season, but are filled to overflowing during the annual period of inundation. Numerous islands are formed by the river during its course, most of which are mere sandbanks deposited during one rainy season to be swept away by the inundation of the following year. The principal tributaries after leaving the Assam Valley are the DHARLĀ and TĪSTA on its right bank; the latter joins it a few miles to the south-west of Chilmārī in Rangpur District.

In agricultural and commercial utility, the Brahmaputra ranks next after the Ganges, and with the Indus, among the rivers of India. Unlike those two rivers, however, its waters are not largely utilized for artificial irrigation, nor are they confined within embankments. The natural overflow of the periodic inundation is sufficient to supply a soil which receives, in addition, a heavy rainfall; and this natural overflow is allowed to find its own lines of drainage. The plains of Eastern Bengal, watered by the Brahmaputra, yield abundant crops of rice, jute, and mustard, year after year, without undergoing any visible exhaustion.

The Brahmaputra is navigable by steamers as high up as Dibrugarh, about 800 miles from the sea; and in its lower reaches its broad surface is covered with country craft of all sizes and rigs, down to dug-out canoes and timber-rafts. It is remarkable that there is comparatively little boat traffic in the Assam Valley itself. Goālpāra is the great emporium of the boat trade, and Gauhāti is ordinarily the extreme point reached by boats of large burthen. Nearly all the boats which resort to Goālpāra and Gauhāti come from Bengal or the United Provinces. Large cargo steamers with their attendant flats and a daily

service of smaller and speedier passenger vessels ply on the Brahmaputra between Goalundo and Dibrugarh. The upward journey takes four and a half days to complete, the downward three. The principal places passed in the upward journey are, on the right bank, Sirājganj, a great emporium for jute and other agricultural produce, Dhubri, Tezpur, and Bishnāth; and on the left bank, Goālpāra, Gauhāti, Silghāt, and Dibrugarh. There are, however, eighteen other *ghāts* at which steamers call, the most important being Shikārighāt for Golāghāt, Kakilāmukh for Jorhāt, and Disāngmukh for Sibsāgar. The downward traffic chiefly consists of tea, coal, oilseeds, timber, hides, lac, and raw cotton from Assam; and jute, oilseeds, tobacco, rice, and other food-grains from Eastern Bengal.

Brāhmaur (*Brāhmapura*).—Village in the Brāhmaur *wazārat*, and the ancient capital of the Chamba State, Punjab, situated in 32° 27′ N. and 76° 37′ E., on the Budhil, a tributary of the Rāvi. Population (1901), 263. It contains three ancient temples, of which the largest is of stone and dedicated to Manimahesh, an incarnation of Siva, with an inscription of 1417. The second temple of stone is dedicated to the Narsingh or lion incarnation of Vishnu; and the third, mostly of wood, is dedicated to Lakshana Devi, with an inscription of Meru Varma, a ruler of Brāhmaur in the seventh century. This temple exhibits a mass of elaborately carved woodwork.

[A. Cunningham, *Archaeological Survey Reports*, vol. xiv, pp. 109–15, and vol. xxi, pp. 7–13; *Indian Antiquary*, vol. xvii, pp. 7–13.]

Brāhui Range, Central.—A mountain range in Baluchistān, occupying the northern part of the Jhalawān and the whole of the Sarawān country in the Kalāt State and part of the Administered areas, and forming the upper portion of the great system to which Pottinger gave the name of the Brahooick Mountains. It lies between 27° 57′ and 30° 36′ N. and 66° 31′ and 67° 52′ E., including the whole of the mass of mountainous country between the Mūla on the south and the Pishīn Lora and Zhob rivers on the north. Between the Mūla river and Quetta the strike is north and south, but a few miles north of the latter place the ranges turn sharply to the east and south-east to meet the Sulaimān Mountains. The total length of the arc thus formed is about 225 miles and the breadth about 70 miles. The general formation is a series of parallel ranges, containing in their midst those narrow valleys which form the upper highlands of Baluchistān. All the highest peaks in the Province are situated in this system. They include Khalīfat (11,440 feet), a magnificent mountain having a sheer drop of 7,000 feet to the Shāhrig valley; Zarghūn to the north of Quetta (11,738 feet); Takatu (11,375 feet); the Koh-i-mārān (10,730 feet); and the Harboi hill, the highest point of which is Kakku (9,830 feet). None of the ranges has an altitude of less than 6,000 feet. They are composed

chiefly of massive limestone—well exposed in Takatu and Khalīfat—which passes into an enormous thickness of shales. Zarghūn consists of conglomerate belonging to the Siwālik series. Coal is found towards Harnai. The southern parts of the range are inhabited by tribes of Brāhuis, while to the north live Afghāns, chiefly Kākars. Near the north-east end of the range lies ZIĀRAT, the Provincial summer head-quarters. The railway traverses the Bolān and Harnai Passes. Another important pass is the Mūla. Unlike most of the other ranges of the Province, the Central Brāhui range is comparatively well clothed with vegetation, especially the Ziārat, Zarghūn, and Harboi hills. All the principal 'reserved' forests in Administered areas are situated on it. Juniper is most abundant, the trees being of great age; but the largest grow to a height of only about 60 or 70 feet. The timber is used for fuel and in a few places for building purposes.

Brāhuis, The.—A confederacy of tribes occupying the Sarawān and Jhalawān country of the Kalāt State in Baluchistān, and headed by the Khān of Kalāt. The Brāhuis are divided into two main divisions, each under its own leader: the Sarawāns living to the north of Kalāt under the Raisāni chief, and the Jhalawāns to the south under the Zahri chief. The Sarawān division includes among its principal tribes the Raisāni, Shāhwāni, Muhammad Shāhi, Bangulzai, Kūrd, Lehri, and Sarparra. The Lāngav, though not occupying a position of equality with those just named, are also reckoned among the Sarawāns. Among the Jhalawāns are the Zahri, Mengal, Mīrwāri, Bīzanjau, Muhammad Hasni or Māmasani, and several others. At the head of each tribe is a chief, who has below him subordinate leaders of clans, sections, &c. The whole tribe is united by common blood-feud rather than by kinship. When occasion arises, intersectional combinations take place. The internal administration of each tribe is independent, cases being settled by the chief in consultation with his headmen. The crystallization of the tribal groups into the Brāhui confederacy was completed by Nasīr Khān I, each tribe being bound to furnish a number of armed men, and intertribal cases being referred to the ruler. That the Brāhuis are essentially nomads and flockowners is well indicated by their proverb: 'God is God, but a sheep is a different thing.' The Muhammadan religion which they profess is largely overgrown with animistic superstitions. Hospitality is common, but is not so profuse as among the Baloch.

The origin of the Brāhuis is as much an enigma to the ethnologist as their language has been to the philologist. The theory that their name is derived from the old Persian words *ba rohi*, 'a hillman,' may be rejected. Their own, and the most plausible, explanation is that the word Brāhui is derived from the eponym of one of their forefathers, *Brāho*, which is a not uncommon modification of the name *Brāhīm* or

Ibrāhīm at the present day. Early Baloch poems also describe them as the *Brāho.* In the light of anthropometrical measurements recently made, Mr. Risley classes the Brāhuis as Turko-Irānians. It seems not unlikely that they also contain remnants of those hordes of broad-headed nomadic people who came into India at the beginning of the Christian era and are known by the generic term of Scythians. We first find the Brāhuis in authentic history divided into groups clustering round Kalāt under a chief drawn from their senior branch, the Mīrwāris, and called Mīr Umar. Driving out the Jat population of the Jhalawān country, they made themselves masters of the whole region between Mastung and Las Bela. Only Mīr Umar's descendants are now regarded as true Brāhuis. They include the Ahmadzais, the ruling family, with their collaterals the Iltazais; the Sumalānis, Kalandarānis, Gūrgnāris, Kambarānis, Mīrwāris, and Rodenis. As the power of the chiefs expanded, the name Brāhui was extended to the various groups which were included in the confederacy from time to time, numbers of Jats, Afghāns, and Baloch being thus absorbed.

The Brāhui is of middle size, square-built and sinewy, with a sharp face, high cheek-bones, and long, narrow eyes. His nose is thin and pointed. His manner is frank and open. Though active, hardy, and roving, he is not comparable with the Baloch as a warrior, but he makes a good scout. The songs and ballads of the people celebrate no days on which hundreds were killed, as in the case of the latter. With few exceptions the Brāhui is mean, parsimonious, and avaricious, and he is exceedingly idle. He is predatory but not a pilferer, vindictive but not treacherous, and generally free from religious bigotry. His extreme ignorance is proverbial in the country-side: 'If you have never seen ignorant hobgoblins and mountain imps, come and look at the Brāhui.' The Brāhui wears a short smock descending to the knees and fastening on the right shoulder, wide trousers often dyed black or brown, and a felt cap or a turban. His foot-covering consists of sandals or embroidered heavy shoes. He is fond of having a waistcoat over his smock, and he also wears a black overcoat (*shāl*). A woman's dress consists of a long shift profusely embroidered in front. If married, she wears a kind of corset, lacing behind. Her hair is done in two plaits joined at the back and covered by a long cotton scarf.

The Brāhuī language has long been an interesting puzzle to the philologist. Like the Basque of Europe it stands alone among alien tongues, a mute witness to ethnical movements occurring before the rise of authentic history. It has no literature of its own, and our limited knowledge of it is due to European scholars. Some have connected Brāhuī with the Aryan group, others with the Kol language of Central India; while others, among whom is Dr. Trumpp, place it with the Dravidian tongues of Southern India. Dr. Caldwell refused Brāhuī a

place in his list of Dravidian tongues, though he admitted that it contained a Dravidian element. The latest inquiries, however, confirm its connexion with Dravidian. Among its most striking points of likeness to the South-Indian group are some of its pronouns and numerals, the use of post-positions instead of prepositions, the absence of a comparison of adjectives by suffixes, the lack of the relative pronoun except as borrowed, and the negative conjugation of the verb.

Bramhapurī (*Brahmapurī*).—Northern *tahsīl* of Chānda District, Central Provinces. In 1901 its area was 3,324 square miles, and its population 220,453 persons. In 1905 a new *tahsīl* was constituted at Garhchirolī, to which 2,527 square miles, including fifteen *zamīndāri* estates with a total area of over 2,000 square miles, were transferred from Bramhapurī, the Bramhapurī *tahsīl* at the same time receiving a small accession of 100 square miles of territory from Chānda. The revised totals of area and population of the Bramhapurī *tahsīl* are 897 square miles and 115,049 persons. The population in 1891 of the area now constituting the *tahsīl* was 144,157. The density is 128 persons per square mile, and the *tahsīl* contains 340 inhabited villages. Its head-quarters are at Bramhapurī, a village of 4,238 inhabitants, 77 miles from Chānda town by road. The *tahsīl* contains 443 square miles of Government forest. The land revenue demand in 1903–4 for the area now constituting the *tahsīl* was approximately Rs. 82,000. Bramhapurī is almost wholly rice country, and contains a number of fine irrigation tanks in the larger villages.

Brindāban (from *brindā*, *Ocymum sanctum*, and *ban*, 'a grove').—Town in the District and *tahsīl* of Muttra, United Provinces, situated in 27° 33′ N. and 77° 42′ E., near the Jumna, and connected by a metalled road and the branch line of the Cawnpore-Achhnerā Railway with Muttra city. Population (1901), 22,717, of whom only 1,409 are Muhammadans. The town has no political history, but according to tradition was the place where Krishna passed most of his youth and where his mistress, Rādhā, loved to dwell. It is visited annually by thousands of Hindu pilgrims from the most distant parts of India. It contains about 1,000 temples, and the peacocks and monkeys with which the neighbourhood abounds enjoy special endowments. The town itself dates from the sixteenth century, when several holy men from different parts of India settled here, and four of the existing temples were built about that time. The finest of these is the temple of Govind Deva, built in 1590 by Rājā Mān Singh of Amber (Jaipur), a magnificent building of red sandstone, cruciform, with a vaulted roof. It has been restored by the British Government. The development of various Vaishnava cults connected with the worship of Krishna has caused the growth of the place. Some large temples were erected in the nineteenth century, one of which was built on the model of Southern

Indian temples, at a cost of 45 lakhs, by the great banking firm or Seths of Muttra. Another large temple is still under construction by the Mahārājā of Jaipur. The town lies some distance from the Jumna, surrounded by sacred groves of trees, most of which contain shrines. The river face has been improved by handsome *ghāts* of stone steps. There are branches of the Church Missionary Society and the American Methodist Mission; and the latter society maintains a dispensary, apart from the District board dispensary.

Brindāban has been a municipality since 1866. During the ten years ending 1901 the income and expenditure averaged Rs. 24,000. In 1903–4 the income was Rs. 26,000, chiefly from octroi (Rs. 19,000); and the expenditure was Rs. 28,000. There is a considerable industry in calico printing, and second-hand flannel is largely imported from Mārwār and Bīkaner to be renovated. The town, however, depends on the pilgrim traffic for its prosperity. There are two municipal and four aided schools for boys with 296 pupils in 1904, besides a small girls' school maintained by the American Methodist Mission.

Broach District (*Bharūch*).—District in the Northern Division of the Bombay Presidency, lying between 21° 25′ and 22° 15′ N. and 72° 31′ and 73° 10′ E., with an area of 1,467 square miles. It is bounded on the north by the river Mahī, which separates it from the territory of Cambay; on the east and south-east by the Native States of Baroda and Rājpīpla; on the south by the river Kīm, dividing it from Surat District. To the west lies the Gulf of Cambay, along the shore of which the District stretches for a distance of 54 miles. The name is derived from Bharukachha, a corruption of Bhrigu Kachha, 'the field of Bhrigu,' the eponymous hero of Broach city.

Physical aspects.

The District forms an alluvial plain 54 miles in length, sloping gently westwards to the shores of the Gulf of Cambay, and varying in breadth from 20 to 40 miles. With the exception of a few hillocks of sand-drift along the coast, and some mounds in the neighbourhood of Broach city, the level of the plain is unbroken by any rising ground. The Mahī and Kīm—the former a river of 300 miles in length, with a drainage area estimated at from 15,000 to 17,000 square miles, and the latter with a course of 70 miles and a drainage area of about 700 square miles—form respectively the northern and southern boundaries of the District. Between these limits are two other rivers which discharge their waters through the Broach plain into the Gulf of Cambay—the Dhādhar about 20 miles south of the Mahī, and the Narbadā between the Dhādhar and the Kīm. The Dhādhar passes through the Broach plain for 24 miles, or about one-third of the entire length of its course; and the Narbadā flows for the last 70 miles of its course through the District, gradually widening into an estuary, whose shores when they fall away

into the Gulf of Cambay are more than 13 miles apart. The water of these rivers is not made use of for irrigation; and though each has a tidal estuary extending for several miles inland, none of them, except the Narbadā, and for a short distance the Dhādhar, is serviceable for purposes of navigation. Owing to the height of the banks of its rivers, the District is, for drainage purposes, to a great extent dependent on creeks or backwaters running inland, either directly from the coast-line or from the banks of rivers at points in their course below the limit of tidal influence. Of the salt-water creeks or backwaters, the three most important are the Mota, breaking off from the Dhādhar river about 6 miles west of the town of Amod; the Bhūkhi, running inland from the right bank of the Narbadā, about 15 miles west of the city of Broach; and the Wand, an inlet from the shore of the Gulf of Cambay, about 8 miles north of the mouth of the Kīm river.

The surface of the plain consists, over almost its entire area, of black cotton soil, highly fertile and well cultivated. This black soil covers deposits of brown clay, containing nodular limestone above and gravel and sand underneath. Within 30 miles of the coast hardly any rocks are to be seen. Farther inland, the gravels and clays of the Nummulitic series begin to appear, and in the south of the District trap crops out. Conglomerate and limestone are also found in this tract, but otherwise the plain of Broach contains no minerals.

Except for a small tract of waste land 161 acres in extent, lately set apart for the growth of *babūl* trees, the District is without forests; and only in a few villages is the plain well covered with trees. The palmyra palm, the only liquor-yielding tree, is largely found south of the Narbadā. The fruit trees are the mango, guava, and tamarind. On an island in the Narbadā, about 12 miles above Broach, is a famous banyan or *vad* tree, known as the *Kabīr vad*, because, as the story goes, it sprang from a twig which the sage Kabīr once used for cleaning his teeth. About the year 1780 this tree is said to have had 350 large and more than 3,000 small stems, the principal of which enclosed a space nearly 2,000 feet in circumference. During the march of an army this tree had been known to shelter 7,000 men. Nearly fifty years later (April, 1825) Bishop Heber wrote of it: 'Though a considerable part of the tree has, within the last few years, been washed away, enough remains to make it one of the most notable groves in the world.' Since then it has suffered much from age and floods, and, owing to the dense undergrowth which conceals the ramifications of its stems, it is no longer so notable an object as formerly. *Hibiscus*, *Crotalaria*, *Indigofera*, *Butea*, *Cassia*, *Vicoa*, *Leucas*, and *Tricholepis* are the chief flowering plants.

Cultivation is too general to allow much scope for wild animals. The hog, wolf, and antelope almost exhaust the list. The only indi-

genous game-birds are the grey partridge, the bush-quail, and the grey duck. The District is well supplied with fish—fresh-water, salt-water, and migratory.

The District is as healthy as any part of Gujarāt, and the climate is more pleasant than in those parts situated farther from the sea. The hottest months are March and April. In the cold season frost is not unknown, and is sometimes, as in 1835 and 1903, sufficiently severe to destroy the crops. The temperature varies from 46° in December to 112° in May. The annual rainfall over the whole District averages 35 inches, varying from 32 in the Hānsot *petha* to 42 at head-quarters.

History.

By tradition Broach District once formed part of the Mauryan empire, the famous ruler of which, Chandragupta, is said to have resided at Suklatīrtha. It then passed into the hands of the princes known as the Sāhas or Western Kshatrapas. Gūrjar and Rājput rulers followed, subject to the overlordship of the Chālukyas of Kalyān and their successors the Rāshtrakūtas. It was subsequently included in the kingdom of Anhilvāda until the Musalmān conquest in 1298. For nearly five hundred years the District remained subject to the Musalmāns, in four periods, the early Musalmān governors of Gujarāt (1298–1391) being succeeded by the Ahmadābād kings (1391–1572), who were replaced by the Delhi emperors (1572–1736), and finally by independent chiefs (1736–72). During the third period, Broach was visited by the English merchants Aldworth and Withington, and in 1616 a house was hired for an English factory. A Dutch factory followed about 1620. At the end of the seventeenth century the Marāthās twice raided the city of Broach. But soon after the accession of the British to political power at Surat, certain questions of revenue gave rise to a dispute with the ruler of Broach, and in 1771 a force was sent from Surat against his capital. This expedition, which was not begun till May, resulted in failure; but during the ensuing rainy season the Nawāb of Broach visited Bombay and agreed to pay to the English a sum of 4 lakhs. This, however, he failed to do, and in November, 1772, a second expedition was sent against Broach. The city was taken with little difficulty, though with the loss of General Wedderburn, the commander of the force. The territory acquired by the capture of the city comprised 162 villages. In 1783 the country under Broach, which by treaty and conquest had come to include the lands of Anklesvar, Hānsot, Dehejbāra, and Amod, was by the Treaty of Sālbai handed over to the Marāthās—the original conquest to Mahādji Sindhia, and the new acquisitions to the Peshwā. For nineteen years these territories remained under Marātha rule, till in 1803, in consequence of the Treaty of Bassein, Sindhia's possessions in Gujarāt were invaded by a British force, and the city of Broach was again taken. No further territorial changes took place till 1818, when,

under the terms of the Treaty of Poona, three *tālukas* were added to the District. Since that date the history of Broach has been marked by three events—in 1823 an outbreak of Kolīs took place; in 1857 a riot between the Pārsīs and Musalmāns; and in 1886 a Tataora rising, leading to the murder of the District Superintendent of police.

Jain, Hindu, and Muhammadan buildings of archaeological interest are to be met with in Broach city, the most noteworthy being the Jāma Masjid, profusely ornamented and sculptured in the Jain style.

Population.

The earliest year for which an estimate of the population is available is 1820, when the number of inhabitants was returned at 229,527, or 173 to the square mile. In 1851 the number was 290,984, or 200 to the square mile. At the last four enumerations, the population was: (1872) 350,322, (1881) 326,930, (1891) 341,490, and (1901) 291,763. The Census of 1901 shows that the population of the District, after considerable fluctuations between 1872 and that date, is now 199 to the square mile. The decline in 1881 was due to failure of the crops in 1878 and to a severe outbreak of cholera, which reduced the population by 7 per cent. The decrease in 1901 was due to famine and plague. The District includes five *tālukas*, with area and population as follows:—

Tāluka.	Area in square miles.	Number of Towns.	Number of Villages.	Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
Jambusar	387	1	81	61,846	160	− 25	7,599
Amod	176	1	51	31,911	181	− 17	4,958
Vāgra	308	...	69	26,686	87	− 27	3,567
Broach	302	1	105	110,189	364	− 2	19,894
Anklesvar*	294	2	99	61,131	208	− 14	8,730
District total	1,467	5	405	291,763	199	− 14	44,748

* Includes Hānsot *petha*.

Of the whole population, about 20 per cent. live in towns containing more than 5,000 inhabitants. Originally the towns were walled, and each was provided with its own fort. Within the circuit of the walls lived the richest part of the people, dwelling in well-built houses; without were the poorer classes, lodged chiefly in hovels. Though the fortifications have now been allowed to fall into decay, a marked distinction still remains between the town proper and its suburbs. The villages have in general a thriving appearance, arising from the common use of tiles for the houses instead of thatch; and the trees with which they are surrounded contribute to give a pleasing effect. The respectable inhabitants have their houses together in courts or 'closes,' with

a single entrance for each 'close,' which is shut at night for the protection of cattle. Formerly, many of the villages were surrounded by walls of mud or burnt brick as a shelter against the attacks of freebooters. The towns are BROACH, the head-quarters, AMOD, ANKLESVAR, HĀNSOT, and JAMBUSAR. Hindus number 195,922, or 67 per cent. of the total; Musalmāns, 63,408, or 22 per cent.; Animists, 25,294, or 8 per cent.; Jains, 3,254; and Pārsīs, 3,127. Gujarātī is spoken by 93 per cent. of the people.

The chief Hindu castes are: Kolīs (62,000), Kunbīs (19,000), Dhers (15,000), Rājputs (13,000), and Brāhmans (12,000). Bhīls, returned partly as Hindus and partly as Animists at the Census, number 35,000. The Musalmāns who claim a foreign origin comprise four classes—Saiyid, Mughal, Pathān, and Shaikh. Of those whose origin is traced to Hindu converts, the most important are the Bohrās, who include two main classes, distinct from each other in occupation and in sect: one engaged in trade, who are mostly Ismaili Shiahs; the other employed almost entirely in tilling the fields, belonging to the Sunni sect, and forming nearly half of the entire Musalmān population of the District. The latter do not marry with other Musalmāns. The total number of Bohrās is 31,000. The other classes of converted Hindus are Molesalāms (formerly Rājputs), Māliks, Momnās, and Shaikhs. The Shaikhs number altogether 12,000. With the exception of the Bohrās, who are a well-to-do body, the Broach Musalmāns are for the most part in a depressed condition. There is also a peculiar Musalmān community called Nāgoris, who have long been settled in the District. They are said to derive their name from their former home, Nāgor, a town in Mālwā, and are now carters and labourers.

The chief agricultural classes of Broach District are Pātidārs (also called Kunbīs), Girāsiās, Kachhias, Mālīs, and Kolīs; the trading classes are Vaishnava Baniās, as well as Shrāwaks or Jains, Bohrās of the Shiah sect, and Pārsīs. The Pātidārs, as peaceable as they are industrious, form the most respectable part of the rural population; they are well acquainted with the qualities and powers of all varieties of the soil. The Girāsiās afford an instance of a complete change from the fierceness and turbulence of a martial class to the quietness, obedience, and industry of tillers of the soil. The Kachhias are skilful market-gardeners. The Kolīs, who stand lower in the social scale than the Kunbīs, formerly bore a bad reputation as plunderers, but they are now a reformed race. In many villages they are as steady and hard-working cultivators as any in the District. A few Pārsīs are engaged in agriculture, and are said to be active and skilful husbandmen. Most of the members of this class deal in merchandise, and together with the Shrāwaks form the two most wealthy sections of the trading com-

munity. Agriculture supports 60 per cent. of the population, 16 per cent. are supported by industries, and 2 per cent. by commerce.

The number of Christians has increased during the last decade from 128 to 719. Of these, 685 are native Christians. The Christian population is found mainly in Broach city and *tāluka*. Two missions are at work in the District: the Irish Presbyterian at Broach, which supports a hospital, two dispensaries, an industrial school, two orphanages, and two primary schools; and the German Baptist Mission at Anklesvar, which supports an orphanage and an agricultural settlement.

Agriculture.

The soil is chiefly black, but there are also tracts of brown soil in Anklesvar, Amod, and Jambusar. Both kinds are rich, the chief black-soil crops being cotton, *jowār*, sesamum, *tur*, wheat, and rice; while *bājra*, *jowār*, and pulse are grown in the lighter soils. Tobacco is raised on the alluvial lands of the Narbadā. The early crops are sown in June, and, except cotton, which is seldom ready for picking before February, are harvested in October and November. The late crops are sown in October and reaped in February. A field of black soil requires only one ploughing, and is seldom manured. Light soils, on the other hand, are ploughed three or four times, and are generally manured. The entire set of implements used on a farm may be valued at from Rs. 15 to Rs. 20.

The chief statistics of cultivation are as shown below, in square miles:—

Tāluka.	Total area.	Cultivated.	Irrigated.	Cultivable waste.
Jambusar	387	244	·09	19·0
Amod	176	145	·02	0·5
Vāgra	308	204	·01	6·0
Broach	290*	200	·22	2·0
Anklesvar	306*	213	·50	21·5
Total	1,467†	1,006	·84	49

* The difference between these figures and those shown on p. 21 is due to the fact that since the Census certain villages have been transferred from Broach to Anklesvar.

† The area for which statistics are not available is 29 square miles.

A considerable area of salt land has been taken up by private individuals for reclamation. The lands have been leased by Government on special conditions, rent-free for the first ten years, and for the following twenty years at rents varying from 4 to 8 annas per acre, to be subject to the usual assessment after thirty years. The tenure of the District is mainly *ryotwāri*, *inām* and *jāgīr* lands covering only about 2 per cent. The holders of unalienated land belong to two classes—proprietors of large estates or *thākurs*, and peasant proprietors or ryots. Of the total assessed area, 60,760 acres, or about 10 per cent., are in the possession of men belonging to the landlord class, who are the heirs of old Rājput

families. A peasant proprietor is either a member of a cultivating community, or an independent holder with an individual interest in the land he tills. Of the whole number of villages in the District, the lands of 244, or 59·5 per cent., were in 1862 held by corporations of shareholders, and the remaining 166 villages, or 40·5 per cent., by individual cultivators. In 1903–4, 209 were held under the former conditions, and 197 by individuals. Cotton and *jowār* are extensively sown in the District, occupying 365 and 180 square miles respectively. Wheat (118) is also largely grown, especially in the Vāgra and Jambusar *tālukas*. Next in importance come sesamum (31), rice (23), and *bājra* (16). Tobacco is one of the important crops in the Broach *tāluka*, and *lang* (*Lathyrus sativus*) is also largely grown (66 square miles).

Since 1812 attempts have been made from time to time to improve the cultivation and preparation of cotton. So far the result has been to show that foreign varieties will not thrive in the District. In the matter of ginning, considerable improvements have been made. By the introduction of the Platt-Macarthy roller-gin in 1864, the old native hand-gin (*charkha*) has been entirely supplanted. During the decade ending 1903–4, 24 lakhs was advanced to the ryots under the Land Improvement and Agriculturists' Loans Acts, of which 11 lakhs was lent in 1900–1 and 8·6 lakhs in 1899–1900.

The domestic animals are cows, buffaloes, oxen, horses, asses, sheep, and goats. The cattle are of two breeds: the small indigenous bullock, and the large bullock of Northern Gujarāt. The smaller breed of bullocks, generally driven in riding carts, are worth from Rs. 80 to Rs. 120 each. Prosperous cultivators pay much attention to the appearance and condition of their cattle.

Only an infinitesimal portion of the District (533 acres in 1903–4) is irrigated. The chief sources of supply are 39 Government 'minor' works, 1,153 wells, and 100 tanks. Nine drainage channels were recently excavated by famine labour in the District at a cost of Rs. 42,000.

There are no forests in the District; but a tract of about 10,000 acres in extent has recently been set apart for the rearing of *babūl* and other trees.

With the exception of a conglomerate stone and limestone in the Anklesvar *tāluka*, the plain of Broach is destitute of mineral resources.

The English and the Dutch were tempted to establish factories at Broach, owing to its reputation for the manufacture of fine silk and cotton goods. Competition with the machine-made article has so reduced the number of weavers of hand-made fabrics that, at the Census of 1901, the weavers employed in the local mills were twice as numerous as the

Trade and communications.

hand-workers. There are four cotton-spinning and weaving-mills at Broach, with 62,000 spindles and 859 looms, giving employment to 2,212 operatives, and producing annually 5,000,000 pounds of yarn and 3,000,000 pounds of cloth. Some roughly finished hardware, mainly knives and tools, is made at Amod.

The trade guilds of Broach include the leading capitalists of the city, the bankers and money-changers, cotton-dealers, agents, and those engaged in the business of insurance; other unions represent the smaller trades, and are conducted on the *panchāyat* system common in some parts of India. Details of the constitution and objects of these associations are given in the article on AHMADĀBĀD DISTRICT, where the system is more fully developed than in Broach. One of the main sources of revenue of the chief guild of Broach city is a tax of from 4 to 8 annas per bale of cotton. Except in the case of cotton bills, there is also a charge of one anna on every bill of exchange negotiated. The receipts from these taxes are applied to objects of charity and religion. The chief institution maintained is the hospital (*pānjrāpol*) for old and sick animals, supported at a yearly cost of about Rs. 5,300. In addition to fees and fines levied upon members for breaches of trade rules, some of the guilds adopt special means for collecting funds. Money-changers, grain-dealers, grocers, and tobacco merchants make the observance of their trade holidays—the 2nd, the 11th, and the last day of each fortnight—a source of revenue to the general body. On the occasion of these holidays, only one shop is allowed to remain open in each market. The right to open this shop is put up to auction, and the amount bid is kept for caste purposes. Similarly, the bankers, cotton-dealers, insurers, and brick-layers have, for trade purposes, imposed a tax on the members of their craft or calling. In the case of other classes, the necessary sums are collected by subscription among the members of the caste.

Formerly the Gujarāt and Mālwā trade passed through the ports of Broach and Tankāri; but since the opening of the railway, trade to the sea-coast has greatly diminished. Eighteen hundred years ago Broach was one of the chief seats of trade between India and Western Asia. Gold and silver, slaves, pearls, Italian and Persian wines, and dates were largely imported; and rice, *ghī*, cotton, oil, and sugar were exported, besides sandal-wood, ebony, and muslins. This trade continued until the seventeenth century, when it began to centre in Surat, and subsequently moved to Bombay. Only a small coasting trade now remains. Cotton, wheat, and piece-goods are the chief exports, while yarn, metals, sugar, piece-goods, and timber are imported. In 1903–4 the port of Broach had an import trade of 18 lakhs and an export trade of 13 lakhs, while Tankāri on the Dhādhar river had a total import and export trade combined of 5 lakhs.

External communication is now effected by the Bombay, Baroda, and Central India Railway, which passes through the Anklesvar and Broach *tālukas*, crossing the Narbadā by a fine bridge of 25 spans. A branch of the Rājpīpla State Railway connects Anklesvar with Nandod. The former traverses the District for 27 miles and the latter for 6¼ miles. Passengers from Kāthiāwār can also arrive by sea. The District possesses 37 miles of metalled roads and 138 miles of unmetalled roads. About 28 miles of the former class are maintained by the Public Works department. Avenues of trees are planted along 52 miles. The estuaries of the rivers Narbadā and Dhādhar afford shelter to coasting vessels during the stormy months of the monsoon. There were in 1820 five seaports, of which only two, Broach and Tankāri, are still seats of trade.

Famine.

The years 1630, 1631, and 1755 are said to have been seasons of scarcity, in which, owing to the failure of crops, remissions of revenue were granted. In 1760–1, 1773, and 1786–7 portions of the District verged so closely upon famine that the revenue had to be very largely remitted. The great famine of 1790 was caused by the entire failure of the monsoon. The year 1819 was marked by excessive rainfall, and 1838, 1840, and 1868 by total or partial failure of rain. In 1812 the District suffered from the ravages of locusts, and in 1835 from frost. Years of partial drought have also been numerous. In 1878 the autumnal crops failed in two of the western *tālukas*, on account of excessive rainfall; all the fields sown after a certain period were attacked by swarms of grubs. Between 1899 and 1902 the District suffered from severe famine due to insufficient rain. Relief works, opened in September, 1899, were continued till October, 1902. The highest daily average on works was 106,215 in February, 1900, and on gratuitous relief 72,473 in August, 1900. The mortality rose to 87 per 1,000. Nearly 30 lakhs of revenue was remitted and over 22 lakhs[1] was advanced to cultivators.

Administration.

For administrative purposes the District is divided into five *tālukas*: namely, AMOD, BROACH, ANKLESVAR, JAMBUSAR, and VĀGRA, the petty subdivision (*petha*) of HĀNSOT being included in Anklesvar. The administration in revenue matters is entrusted to a Collector and two Assistants, of whom one is a Covenanted Civilian.

For judicial purposes the District was formerly included within the jurisdiction of the Judge of Surat. It now contains one District Judge with full powers, and 4 Subordinate Judges. Criminal justice is administered by 8 Magistrates. The District is not remarkable for serious offences against property; but among the Bohrās and Bhīls outbursts of violence are not uncommon.

[1] This figure is for the whole famine period from Sept. 1, 1899, to Oct. 31, 1902.

At the time of the introduction of British rule (1803), there was in many villages an association of members of the proprietary body, by which the amount of the state demand was distributed according to a fixed proportion among the members. The peculiarities of this joint tenure (*bhāgdāri*) have, to some extent, disappeared before the system of collecting the revenue direct from the different shareholders.

At first the land revenue demand was fixed after an inspection of the crops by revenue superintendents or *desais*. This system led to numerous abuses. In 1811 the territory forming the original Broach District—namely, the *tālukas* of Broach, Anklesvar, and Hānsot—was surveyed. Later, the survey was extended to the remaining *tālukas* received under the Treaty of Poona in 1818. The first settlement in simple Government villages was made with the village headmen, and aimed at ascertaining the value of the crop in each holding. But in 1837 a new settlement was attempted, regulated by the character of the soil and the range of local prices. The year 1848 saw the settlement revised owing to the fall in prices, and in 1870–1 a fresh settlement on the lines adopted elsewhere in the Presidency was introduced. Under this settlement the realizations were about 19½ lakhs. The revision survey, completed since 1901, shows a decrease in cultivation of over 4,000 acres, and, in assessment, of 4 per cent. The average rates of assessment are: 'dry' land, Rs. 4–0 (maximum Rs. 6–8, minimum Rs. 3–0); rice land, Rs. 5–14 (maximum Rs. 5–4, minimum Rs. 3–0); and garden land, Rs. 8–11 (maximum Rs. 10–0, minimum Rs. 7–0). Collections of revenue, in thousands of rupees, have been as follows:—

	1880-1.	1890-1.	1900-1.	1903-4.
Land revenue . .	28,58	28,88	12,99	30,05
Total revenue . .	34,42	36,87	19,76	37,78

A small aristocracy of Rājput pedigree still occupies a position of some importance in the District; but being heavily burdened with debt, their estates would have been attached and sold if Government had not interfered and assumed the administration of their property under Act XV of 1871.

The District contains five municipalities: BROACH, ANKLESVAR, JAMBUSAR, HĀNSOT, and AMOD. The District board and five *tāluka* boards, which are in charge of local affairs elsewhere, have an average revenue of more than 2½ lakhs, chiefly derived from the land cess, and spent Rs. 61,000 on roads and buildings in 1903–4.

The police of the District are controlled by a Superintendent, assisted by two inspectors. The total strength of the force is 454 persons, including 7 chief constables, 89 head constables, and 358 men. A body of 6 mounted police under one *daffadār* is also maintained.

There are 7 police stations. The District contains 6 subsidiary jails and 12 lock-ups, with accommodation for 255 prisoners. The daily average prison population in 1904 was 48, of whom 8 were females.

Broach stands first as regards literacy among the twenty-four Districts of the Presidency, and 15·3 per cent. of the population (28·3 males and 1·8 females) could read and write in 1901. In 1880–1 there were 218 schools attended by 12,724 pupils, who had increased to 17,276 in 1890–1, and numbered 16,888 in 1901. In 1903–4, 328 public and private schools were attended by 17,424 pupils, including 2,967 girls. Out of 299 public institutions, 252 are managed by local boards, 32 by municipalities, one by Government, 9 are aided and 5 unaided. The public schools include one high school, 5 middle and 293 primary schools. The expenditure in 1903–4 was nearly 1¼ lakhs, of which Rs. 16,000 was derived from fees, and 83 per cent. was devoted to primary education.

Besides a hospital at Broach city the District contains 8 dispensaries, with accommodation for 74 in-patients. Including 538 in-patients, 51,500 persons were treated in 1904, and 1,699 operations were performed. The expenditure was Rs. 15,000, of which Rs. 9,000 was met from Local and municipal funds.

The number of persons successfully vaccinated in 1903–4 was 7,186, representing a proportion of 25 per 1,000, which is slightly below the average for the Presidency.

[Sir J. M. Campbell, *Bombay Gazetteer*, vol. ii, Surat and Broach (1877).]

Broach Tāluka.—Central *tāluka* of Broach District, Bombay, lying between 21° 38′ and 21° 56′ N. and 72° 45′ and 73° 10′ E., with an area of 303 square miles. The population in 1901 was 110,189, compared with 112,906 in 1891. The density, 364 persons per square mile, is the highest in the District, and greatly exceeds the average. It contains one town, BROACH (population, 42,896), its head-quarters; and 105 villages. The land revenue and cesses amounted in 1903–4 to nearly 6 lakhs. Almost the whole of the *tāluka* is a flat rich plain of black soil stretching towards the north bank of the Narbadā, 43 miles of whose course lie within its limits. The remainder consists of a few islands in the bed of the river, and a narrow strip of land on the southern bank, nearly opposite the city of Broach. The supply of tank and well water is defective.

Broach City (*Bharukachha*, or *Bharūch*).—Head-quarters of the District of the same name in Gujarāt, Bombay, situated in 21° 42′ N. and 72° 59′ E., on the right bank of the Narbadā river, about 30 miles from its mouth, and on the Bombay, Baroda, and Central India Railway. The area, including suburbs, is 2⅙ square miles. In 1777 the city is said to have contained 50,000 inhabitants; in 1812, 37,716.

The Census of 1872 returned 36,932; that of 1881, 37,281; that of 1891, 40,168; and that of 1901, 42,896, comprising 26,852 Hindus, 12,022 Muhammadans, and 2,153 Pārsīs. The only classes calling for special notice are, among Hindus, the Bhārgav Brāhmans, who claim to be descendants of the sage Bhrigu. The Pārsīs, from the number and antiquity of their 'towers of silence,' are supposed to have settled at Broach as far back as the eleventh century. Formerly ship-builders and skilled weavers, they have suffered from the decay of both trades. Many of them migrated to Bombay to improve their circumstances; and the frugality of those that are left enables them to keep out of pauperism. The Musalmāns are for the most part in a condition of poverty.

Seen from the southern bank of the Narbadā, or approached by the railway bridge from the south, the massive stone wall, rising from the water's edge and lining the river bank for about a mile, and the buildings standing out from the high ground behind, give the city a marked and picturesque appearance. The fortifications, though by local tradition ascribed to Siddha Rājā Jāyasingha of Anhilvāda (twelfth century), were, according to the author of the *Mirāt-i-Sikandari*, built in 1526 under the orders of Sultān Bahādur, king of Ahmadābād. In the middle of the seventeenth century (1660) the walls are said to have been destroyed by the emperor Aurangzeb, and about twenty-five years later to have been rebuilt by the same monarch as a protection against the attacks of the Marāthās. Of late years the fortifications on the land side have been allowed to fall into disrepair, and in some places almost every trace of them has disappeared. On the southern side, where protection is required against the floods of the river, the city wall is kept in good order. Built of large blocks of stone, the river face of the wall, raised from 30 to 40 feet high, stretches along the bank for about a mile. It is provided with five gates, and the top forms a broad pathway. The circuit of the wall includes an area of three-eighths of a square mile, which in the centre rises to a height of from 60 to 80 feet above the surrounding country. This mound, from the broken bricks and other débris dug out of it, shows signs of being, in part at least, of artificial construction. At the same time the presence of one or two small hillocks to the north of the city favours the opinion that it may have been the rising ground on the river bank which led the early settlers to choose Broach as the site for a city. Within the walls the streets are narrow, and in some places steep. The houses are generally two storeys high, with walls of brick and tiled roofs. In the eastern part of the city are some large family mansions, said to have been built in 1790. In the suburbs the houses have a meaner appearance, many of them being not more than one storey high, with walls of wattle and daub.

With the exception of a stone mosque constructed out of an older Hindu temple, the city contains no buildings of interest. To the west are the groves of the well-wooded suburbs of Vejalpur, and northwards two lofty mounds with Muhammadan tombs relieve the line of the level plain, while on the north-east rows of tamarind-trees mark where a hundred years ago was the Nawāb's garden with 'summer pavilions, fountains, and canals.' To the east are the spots that, to a Hindu, give Broach a special interest, the site of king Bali's sacrifice and the temple of Bhrigu Rishi. About 200 yards from the bastion, at the north-west corner of the fort, is the tomb of Brigadier David Wedderburn, who was killed at the siege of Broach on November 14, 1772. Two miles west of the fort are a few large and massive tombs, raised to members of the Dutch factory. Beyond the Dutch tombs are the five Pārsī 'towers of silence': four being old and disused, and the fifth built lately by a rich merchant of Bombay.

The city of Broach was, according to local legend, originally founded by the sage Bhrigu, and called Bhrigupur or Bhrigu's city. In the first century of the Christian era the sage's settlement had given its name Barugaza to a large province, and had itself become one of the chief ports in Western India. In the early part of the seventh century, according to the Chinese pilgrim Hiuen Tsiang, it contained ten Buddhist convents, with 300 monks and 10 temples. Half a century later Broach was a place of sufficient importance to attract some of the earliest Musalmān expeditions against Western India. Under the Rājput dynasties of Anhilvāda (A.D. 750–1300) Broach was a flourishing seaport. During the troubles that followed the overthrow of the Anhilvāda kings, the city would seem to have changed hands on more than one occasion. But with the exception of two years (1534–6), during which it was held by the officers of the emperor Humāyūn, Broach remained (1391 to 1572) under the Musalmān dynasty of Ahmadābād. About this time the city was twice (1536 a[illegible]) plundered by the Portuguese, who, except for its streets (1603–4 to most of them that two horsemen could not pass at the same time, admired the city 'with its magnificent and lofty houses, with their costly lattices, the famous ivory and black-wood workshops, and its townsmen well skilled in mechanics—chiefly weavers, who make the finest cloth in the world' (*Decadas de Couto*, v. 325). In 1573 Broach was surrendered to Akbar by Muzaffar Shāh III, the last of the line of Ahmadābād kings. Ten years later Muzaffar Shāh recovered the city, but held it only for a few months, when it again fell into the hands of the emperor of Delhi. In 1616 a British factory, and about 1620 a Dutch factory, were established at Broach. In 1660 some of the fortifications of the city were razed to the ground by the order of Aurangzeb. In this defenceless state it was twice, in 1675 and 1686,

plundered by the Marāthās. After the second attack Aurangzeb ordered that the walls should be rebuilt and the city named Sukhābād. In 1736 the Musalmān commandant of the port was raised by Nizām-ul-mulk to the rank of Nawāb. In April, 1771, an attempt on the part of the English to take Broach failed; but in November, 1772, a second force was sent against the city, and this time it was stormed and captured. In 1783 it was handed over to Sindhia, but was retaken in 1803 by the British, and since that time it has remained in their possession.

Broach has a high school with an attendance of 212, a middle school with 186 pupils, and 19 vernacular schools, 11 for boys with 1,636 pupils and 8 for girls with 761. The municipality, established in 1852, had an average income of a lakh during the decade ending 1901. In 1903-4 the income was Rs. 91,000, chiefly derived from octroi (Rs. 50,000). Besides the ordinary Government revenue offices, the city contains a Sub-Judge's court, a civil hospital, a library, and a railway dispensary.

The city has been surveyed, with a view to protect the rights of both the Government and the public. The drinking-water used by the inhabitants of the intramural quarters comes in part from the Narbadā. There are also many good wells in the city; and, unlike Surat and Ahmadābād, the custom of having cisterns in dwelling-houses for the storage of rain-water is not general.

Broach is one of the oldest seaports in Western India. Eighteen hundred years ago it was a chief seat of the trade then carried on between India and the ports of Western Asia. In more recent times, though the trade of Gujarāt has never again centred in the harbours of this District, Broach so far maintained its position that in the seventeenth century it sent ships eastward to Java and Sumatra, and westward to Aden and the Red Sea. Later on the foreign trade of Gujarāt collected in Surat, until from Surat it was transferred to Bombay. wall inclu formerly exported from Broach to China and Bengal was sent through Surat and Bombay; and as far back as 1815 the Broach ports ceased to have any foreign commerce. They now possess only a coasting trade south to Bombay and the intermediate ports, and north as far as Māndvi in Cutch. The total value of the sea-borne trade of Broach in 1903-4 was 31 lakhs, of which 18 lakhs represented imports and 13 lakhs exports. The chief articles of trade with the south are, exports—flowers of the *mahuā* tree, wheat, and cotton; imports—molasses, rice, betel-nuts, timber, coal, iron, and coco-nuts. To the west and north the exports are grain, cotton seed, *mahuā* flowers, tiles, and firewood; the imports, chiefly stone for building.

In ancient times cloth is mentioned as one of the chief articles of export from Broach; and in the seventeenth century, when the English

and Dutch first settled in Gujarāt, it was the fame of its cloth manufactures that led them to establish factories at Broach. The kinds of cloth for which Broach was specially known at that time would seem to have been *baftas*, broad and narrow dimities, and other fine calicoes. The gain to the European trader of having a factory at Broach was that he might 'oversee the weavers, buying up the cotton yarn to employ them all the rains, when he sets on foot his investments, that they may be ready against the season for the ships.' About the middle of the seventeenth century the District is said to have produced more manufactures, and those of the finest fabrics, than the same extent of country in any other part of the world, not excepting Bengal. In consequence of the increasing competition of the produce of steam factories in Bombay, Ahmadābād, and Broach itself, hand-loom weaving in Broach has greatly declined. There are four cotton-spinning and weaving-mills, with a nominal capital (in 1904) of 14 lakhs, and containing 859 looms and 62,000 spindles. The out-turn of yarn and cloth is 5·4 and 3·1 million pounds, and 2,212 persons are employed.

Bubak.—Town in the Sehwān *tāluka* of Lārkāna District, Sind, Bombay, situated in 26° 27′ N. and 67° 46′ E., 3 miles from a station on the North-Western Railway. Population (1901), 3,300. The town was constituted a municipality in 1854 and had an average income of Rs. 5,000 during the decade ending 1901. In 1903–4 the income was Rs. 6,000. Carpets of good quality are manufactured. The town contains a central warehouse for *bhang*, which is grown under licence in the neighbourhood. Owing to floods caused by the overflow of the Manchhar Lake, some of the *zamīndārs* have been of late years considerably impoverished. The public health is also affected by the same cause. In 1869 Bubak suffered severely from cholera. The town contains an English school and one vernacular school, attended respectively by 15 and 72 pupils.

Buckingham Canal.—A salt-water navigation canal, tidal to a great extent wherever the river bars are open, which extends for 262 miles along the east coast of the Madras Presidency from Pedda Ganjām (15° 39′ N. and 80° 15′ E.) in Guntūr District, southwards through Madras City and on to Merkānam (12° 12′ N. and 79° 57′ E.) in South Arcot. At Pedda Ganjām it communicates with the fresh-water high-level canals of the delta system of the Kistna river, and so with the Godāvari delta canals, and thus opens up water communication with the port of Cocanāda, making a total length of 462 miles of main navigable canal. The Buckingham Canal runs within three miles of the coast throughout its entire length, and many portions of it are within half a mile of the sea. It utilizes some portion of the Pulicat Lake.

The excavation of the section from Madras City to this lake was begun as long ago as 1806 as a private enterprise, and was known, after

its originator, as Cochrane's Canal. In 1837 this was taken over by Government, but up to 1876 only $5\frac{1}{2}$ lakhs had been spent in extending it. It was at this time called the East Coast Canal. In the great famine of 1876-8 it was resolved to take up the completion of the undertaking as a relief work, and an expenditure of over 29 lakhs was incurred. It was renamed the Buckingham Canal after the Duke of Buckingham and Chandos, then Governor of Madras. Up to date the total capital cost has amounted to 90 lakhs. The chief difficulty in maintaining it in order was that, as it crossed the whole drainage of the country, it was extremely liable to be silted up. Between 1883 and 1891 large expenditure was incurred in remedying this tendency. In ordinary years the traffic upon it, though it amounts to $12\frac{1}{2}$ millions of tons, is insufficient to meet the working expenses, and a deficit of about Rs. 20,000 occurs. The railway along the coast, which has been opened since the canal was constructed, has robbed it of the long-distance traffic which it was originally designed to carry. The chief traffic along it at present is salt from the various coast factories and firewood from SRĪHARIKOTA to Madras City, but in bad seasons it is of value in connecting the two fertile deltas with the poorer country farther south. Cargo boats and boats belonging to Government and private individuals ply along it. Wharves have been constructed at intervals for their use, and there are also a series of travellers' bungalows upon the banks.

Budalin.—North-eastern township of the Lower Chindwin District, Upper Burma, lying on the east of the Chindwin river, between 22° 14′ and 22° 37′ N. and 94° 56′ and 95° 35′ E., with an area of 451 square miles. The population was 50,847 in 1891, and 55,447 in 1901, distributed in 196 villages. Budalin (population, 2,577), an inland village, 20 miles due north of Monywa, is the head-quarters. The township lies on an elevated plain, and is not well watered; but rice, *jowār*, sesamum, and peas are grown. The area cultivated in 1903-4 was 182 square miles, and the land revenue and *thathameda* amounted to Rs. 1,20,800.

Budaun District (*Badāyūn*).—South-western District of the Bareilly Division, United Provinces, lying between 27° 40′ and 28° 29′ N. and 78° 16′ and 79° 31′ E., with an area of 1,987 square miles. It is bounded on the north by Morādābād; on the north-east by the State of Rāmpur and Bareilly District; on the south-east by Shāhjahānpur; and on the south-west by the Ganges, which divides it from the Districts of Bulandshahr, Alīgarh, Etah, and Farrukhābād. The greater part consists of a level plain crossed by numerous rivers, and much of it requires little irrigation when the rainfall is normal. A high ridge of sand, rarely more than 4 or 5 miles broad, running through the

Physical aspects.

District from north-west to south-east, once formed the old high bank of the Ganges. Between this and the present course of the river is a low tract of country, traversed by a chain of swamps or *jhīls*, and by the river Mahāwa. The fertile plain north-east of the sandy ridge is watered by the Sot or Yār-i-Wafādār, a river which enters the Bisaulī *tahsīl* from Morādābād and flows diagonally across the District, piercing the sandy tract. Although the Mahāwa flows in a deep channel, it is liable to sudden floods, which do much damage, and it receives spill-water from the Ganges. The Sot is fringed by ravines and seldom inundates its banks. In the north-east the Rāmgangā forms the boundary for about 36 miles, and is joined by the Aril.

The District consists entirely of Gangetic alluvium, varying from pure sand to stiff clay. *Kankar* or calcareous limestone is found in places.

Budaun is well wooded, and the whole of the rich upland tract is studded with beautiful mango groves. In the north of the Ganges *khādar* there is thick *dhāk* jungle (*Butea frondosa*); and the north-east corner still contains part of the celebrated *dhāk* jungle which formerly sheltered the Katehriyā Rājputs in their frequent contests with the Musalmān rulers of Delhi. On the sandy ridge vegetation is scanty, and thatching grass and *kāns* (*Saccharum spontaneum*) spring up where cultivation is neglected.

A tiger was killed in 1893 near the Ganges, but this is an extremely rare event. Antelope, wild hog, and *nīlgai* are common, and wolves cause more damage to human life than in any other District of the United Provinces. Black partridge, quail, water-fowl, and sand-grouse abound, and florican are occasionally met with.

The climate of Budaun resembles that of other Districts in Rohilkhand, being somewhat cooler and moister than in the adjacent portions of the Doāb, owing to the neighbourhood of the hills. The average monthly temperature varies from 53° to 60° in January to 88° and 93° in May and June.

The annual rainfall over the whole District averages 34 inches, varying from more than 36 in the east to 31 in the west. Fluctuations in the amount are large; in 1883 only 17 inches fell, and in 1874 as much as 56 inches.

History.

Budaun owes its name, according to tradition, to one Buddh, an Ahar prince, who founded the city at the beginning of the tenth century. When the forces of Islām were beginning to spread eastwards into India, it was held, as recorded in an inscription found at Budaun, by the Rāthor, Lakhana Pāla, eleventh in descent from Chandra, the founder of the dynasty[1]. The half-legendary hero, Saiyid Sālār, is said to have stayed for a time in Budaun; but authentic history commences with the victory of Kutb-ud-

[1] *Epigraphia Indica*, vol. i, p. 63.

dīn Aibak in 1196, who slew the Rājā and sacked the city. Shams-ud-dīn Altamsh obtained the government of the new dependency, which he exchanged in 1210 for the throne of Delhi. Under his successors, Budaun ranked as a place of great importance; and in 1236 it gave a second emperor to Delhi in the person of Rukn-ud-dīn, whose handsome mosque, the Jāma Masjid Shamsī, still adorns the city of which he had been governor. During the thirteenth and fourteenth centuries the annals of Budaun are confined to the usual local insurrections and bloody repressions which form the staple of Indian history before the advent of the Mughals. In 1415 Mahābat Khān, the governor, rose in rebellion, and the emperor, Khizr Khān, marched against him in vain. After a rule of eleven years' duration, the rebellious vassal was compelled in 1426 to surrender to Mubārak Shāh, Khizr Khān's successor. Alam Shāh, the last of the Saiyids, retired to the city in 1450; and during his stay his Wazīr joined with Bahlol Lodī in depriving him of all his dominions, except Budaun, which he was permitted to retain until his death in 1479. His son-in-law, Husain Shāh of Jaunpur, then took possession of the District; but Bahlol Lodī soon compelled the intruder to restore it to the Delhi empire. After the establishment of the Mughal power, Humāyūn appointed governors of Sambhal and Budaun; but they disagreed, and the Sambhal governor, having taken Budaun by siege, put his rival to death. Under the administrative organization of Akbar, Budaun was formed in 1556 into a *sarkār* of the *Sūbah* of Delhi, which was granted as a fief to Kāsim Alī Khān. In Shāh Jahān's time the seat of government was removed to Bareilly. The rise of the Rohilla power, which centred in the latter town, accelerated the decline of Budaun. In 1719, during the reign of Muhammad Shāh, Muhammad Khān Bangash annexed the south-eastern portion of the District, including the city, to Farrukhābād, while the Rohillas, under Alī Muhammad, subsequently seized upon the remainder. In 1754, however, the Rohillas recovered the *parganas* which had been united to Farrukhābād. Budaun fell, with the rest of Rohilkhand, into the power of the Nawāb of Oudh in 1774, and was ceded to the British with other territory in 1801. Shortly afterwards a revolt took place, which was speedily repressed, and the Mutiny of 1857 alone disturbs the peaceful course of civil administration.

News of the outbreak at Meerut reached Budaun on May 15. A fortnight later the treasury guard mutinied, plundered the treasury, and broke open the jail. The civil officers then found themselves compelled to leave for Fatehgarh. On June 2 the Bareilly mutineers marched in, and on the 17th Abdur Rahīm Khān assumed the government. As usual, disturbances broke out between the Hindus and the Musalmān leaders; and in July and August the Muhammadans fought two regular battles with the Rājputs, whom they completely defeated.

At the end of August several European fugitives crossed the Ganges into the District, and were protected at Dātāganj by the landholders. After the fall of Walīdād Khān's fort at Mālāgarh in Bulandshahr, that rebel chieftain passed into Budaun in October, but found it advisable to proceed to Fatehgarh. On November 5 the Musalmāns defeated the Ahars at Gunnaur, and took possession of that *tahsīl*, hitherto held by the police. Towards the close of January, 1858, the rebels, under Niyāz Muhammad, marched against Fatehgarh, but were met by Sir Hope Grant's force at Shamsābād and dispersed. Niyāz Muhammad then returned to Budaun. On April 27 General Penny's force defeated the rebels at Kakrālā, though the general himself was killed in the action; while Major Gordon fell upon them in the north, near Bisaulī. Their leaders fled to Bareilly, and managers were at once appointed to the various *parganas* on behalf of the British Government. By May 12 Budaun came once more into our hands, though Tāntiā Topi, with his fugitive army, afterwards crossed this portion of Rohilkhand into Oudh on the 27th. Brigadier Coke's column entered the District on June 3, and Colonel Wilkinson's column from Bareilly on the 8th. Order was then permanently restored.

The principal archaeological remains are at BUDAUN TOWN, where a series of tombs, mosques, and other religious buildings remain to mark the former importance of the place.

Population.

The District contains 11 towns and 1,087 villages. Owing to unfavourable seasons the population fell considerably between 1872 and 1881, but has risen since. The numbers at the last four enumerations were as follows: (1872) 934,670, (1881) 906,541, (1891) 925,982, and (1901) 1,025,753. There are five *tahsīls*—GUNNAUR, BISAULĪ, SAHASWĀN, BUDAUN, and DĀTĀGANJ—the head-quarters of each being at a place of the same name. The principal towns are the municipalities of BUDAUN, SAHASWĀN, UJHĀNĪ, and the 'notified area' of BILSĪ. The following table gives the chief statistics of population in 1901:—

Tahsīl.	Area in square miles.	Number of Towns.	Number of Villages.	Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
Gunnaur	370	1	313	162,291	439	+ 28·3	1,671
Bisaulī	360	3	350	211,507	588	+ 15·1	2,538
Sahaswān	454	2	382	193,628	426	+ 0·3	2,813
Budaun	385	2	377	243,141	632	+ 7·3	6,938
Dātāganj	418	3	385	215,186	515	+ 9·7	2,824
District total	1,987	11	1,807	10,25,753	516	+ 10·8	16,784

Hindus form 83 per cent. of the total and Musalmāns 16 per cent. There are 6,116 Christians, chiefly natives. Between 1891 and 1901 the District was prosperous owing to favourable agricultural conditions, and the increase in population was remarkably large. Almost the whole population speak Western Hindī, the principal dialect being Braj.

Ahars are the most numerous Hindu caste, numbering 144,000, or about 16 per cent. of the total. They are a hardy, independent caste, allied to the Ahīrs, living by agriculture, and are only found in Rohilkhand and a few adjoining Districts. The other important Hindu castes are Chamārs (leather-dressers and cultivators), 134,000; Muraos (cultivators), 86,000; Rājputs, 62,000; Brāhmans, 61,000; and Kahārs (servants and cultivators), 47,000. The chief Muhammadan tribes are Pathāns, 29,000; Shaikhs, 23,000; and Julāhās (weavers), 20,000. Agriculture supports more than 67 per cent. of the total population, personal service 5 per cent., general labour 5 per cent., and cotton-weaving 3 per cent. Rājputs, Shaikhs, and Ahars are the principal holders of land; Muraos and the few Jāts in the District are the best cultivators.

The American Methodist Mission opened work in Budaun in 1859, and has recently been very successful in making converts. Of the 6,080 native Christians in the District in 1901, 5,972 were Methodists.

Agriculture.

The fertile plain which includes most of the District is called Katehr, and is well cultivated. With good rains it does not need irrigation, but if necessary temporary wells can be dug at small cost. Wheat and *jowār* are here the principal crops, and sugar-cane and rice are grown to some extent. South-west of this lies the sandy ridge of *bhūr*, which is rendered infertile by excessive rain, and in which wells cannot be made. After cultivation in favourable seasons for two or three years a fallow of five to ten years is required. The *bhūr* chiefly produces barley and *bājra*. The Ganges *khādar* is generally liable to inundations and to injury from wild animals. Wheat is grown where possible, and fine crops of barley and peas are obtained in good years. Rice is grown largely in the north-east near the Rāmgangā, and in the south-east near the Sot.

The ordinary tenures of the United Provinces are found, 2,948 *mahāls* being held *zamīndāri*, 1,355 *pattīdāri*, and 69 *bhaiyāchārā*. Large estates are few in number. The main agricultural statistics for 1903–4 are shown in the table on the next page, in square miles.

The chief food-crops are wheat and *bājra*, which covered 583 and 373 square miles respectively, or 37 and 24 per cent. of the net area cropped. Barley, *jowār*, maize, gram, and rice each cover from 9 to 6 per cent. The area under cotton is decreasing, but still amounts to about 26 square miles; sugar-cane covers 23, and poppy 59 square miles. Indigo cultivation is almost extinct.

Tahsīl.	Total.	Cultivated.	Irrigated.	Cultivable waste.
Gunnaur . . .	370	246	40	70
Bisaulī . . .	360	322	69	10
Sahaswān . . .	454	338	54	48
Budaun . . .	385	341	65	49
Dātāganj . . .	418	311	64	62
Total	1,987	1,558	292	239

The great feature of the agriculture of the District is the increase in the area double cropped, which rose in thirty years from 2 per cent. of the total to 21 per cent. In the *khādar* maize is growing in popularity, as it rises above floods before the other autumn crops, and sugar-cane is also being more largely planted. The area under wheat and barley is increasing. Advances under the Land Improvement and Agriculturists' Loans Acts are rarely taken except in unfavourable seasons. Out of 1·3 lakhs advanced from 1890 to 1904, nearly Rs. 72,000 was lent in the famine years 1896–7.

Stud bulls were at one time stationed in the District; but none is kept now, and the ordinary breed of cattle is inferior. Horse-breeding is popular, and six stallions are maintained by Government. Sheep and goats are of the ordinary poor type, and the best animals are imported from Rājputāna.

Wells are the chief source of irrigation, and in 1903–4 supplied 194 square miles, while tanks or *jhīls* supplied 64 and rivers 27. Masonry wells are used for this purpose only in the north of the District, where the spring-level is low. Elsewhere temporary wells are made, lasting for a single harvest. A system of private canals, irrigating about 1,000 acres of rice, has been made in the south-east of the District, where the Sot cuts through the *bhūr* and enters the *khādar*; and another rough system exists on the Aril. The Mahāwa is not used for irrigation, but the Sot supplies a small area in dry years.

Kankar or nodular limestone is the chief mineral product. Lime is occasionally made from this, but more commonly from a kind of calcareous marl.

Trade and communications.

The chief manufacturing industry is that of sugar-refining. Indigo was formerly made largely, but very little is prepared now. Cotton-weaving, carpentry, brasswork, and pottery are of the ordinary type; a little papier mâché work is turned out at Budaun town.

Owing to the poorness of communications, the District has been left behind in the general growth of trade. BILSĪ, once the second largest mart for grain in this part of Rohilkhand, is now of small account; and SAHASWĀN, another centre in the days before railways changed the

direction of commerce, has no trade at all. Agricultural produce, chiefly grain and sugar, is exported with difficulty. The imports include cloth, salt, and metals. A large fair is held annually at KĀKORĀ, which is attended by 150,000 people.

The branch of the Oudh and Rohilkhand Railway from Bareilly and Alīgarh cuts through two portions of the north of the District. A narrow-gauge line from Bareilly through Budaun, opened in 1906, crosses the Ganges and joins the Cawnpore-Achhnerā Railway at Soron in Etah District.

A good deal has been done in recent years to improve the roads in the District, which contains 120 miles of metalled and 445 miles of unmetalled roads. The former are maintained by the Public Works department, but the cost of all but 33 miles is met from Local funds. There are avenues of trees on 126 miles. The chief roads are that leading from Bareilly to Hāthras and Muttra, which passes through Budaun town, and a road from Budaun to Aonla railway station. Feeder roads to other stations have been made, but communications in the south and east of the District are still backward.

Famine.

A native historian records a famine in 1761, during which large numbers of people died and many emigrated. In 1803–4, soon after the commencement of British rule, the harvest failed and many farmers absconded. In the great famine of 1837–8 Budaun suffered the extreme of misery: thousands died of starvation, grain rose to unattainable prices, and the police found themselves powerless to preserve order. The scarcity of 1860–1 was less serious; but relief works were opened and remissions made, and similar measures were required in 1868–9. In 1877 a deficiency in the rainfall caused some distress, but timely rain in October gave relief. The famine of 1896–7 did not affect Budaun appreciably.

Administration.

The Collector is usually assisted by a member of the Indian Civil Service (when available), and by four Deputy-Collectors recruited in India. A *tahsīldār* is stationed at the head-quarters of each *tahsīl*, and an officer of the Opium department at Budaun town.

There are four regular Munsifs, and the District is included in the Civil Judgeship of Shāhjahānpur and in the Sessions Judgeship of Morādābād. Sessions cases are tried by the Additional Judge of the latter District. Budaun holds a bad reputation for violent crimes and for dacoity. Female infanticide was formerly strongly suspected, and entailed the maintenance of a special police; but in 1904 only 1,141 names remained on the register of persons proclaimed under the Act.

The area now forming Budaun was, at the cession in 1801, included in Morādābād. Various changes were made, and in 1823 a District of Sahaswān was formed, which also comprised parts of the present

Districts of Etah and Alīgarh. By 1845 the District had assumed its present shape. The early settlements were for short periods, and were based on the previous demand or on a system of competition. Rights in land were very lightly prized and were freely transferred. Operations under the improved system, laid down by Regulation VII of 1822, commenced with estates which were being directly managed by the Collector owing to the resignation of proprietors or the failure to find purchasers at sales. The first regular settlement under Regulation IX of 1833 was made between 1834 and 1838. It was preceded by a survey, and rights were completely recorded. The land was valued as the basis of the assessment and a demand of 9 lakhs was fixed. The next revision took place between 1864 and 1870, on the usual lines. Soils were classified and the rent paid for each class of land carefully ascertained. A rate, usually in excess of this, was assumed as the basis of assessment, and applied village by village, with modifications where necessary. The revenue was raised from 9·3 to 10·3 lakhs, and the new assessment was subsequently found to have been very light. The latest revision was carried out between 1893 and 1898. In this the assessment was made on the recorded rentals, which were found to be, on the whole, reliable. Land was again classified into circles according to the quality of its soil, and rates for each class were ascertained by analysis of the rents actually paid for different kinds of holdings. These rates were used in checking and correcting the recorded rent-rolls. In assessing, the revenue was fixed at less than half the accepted 'assets' in cases where there was reason to believe that these could not be collected over a series of years. The new revenue is 13·2 lakhs, representing 46·3 per cent. of the 'assets.' The incidence is a little more than R. 1 an acre, varying from 11 annas to about Rs. 1·6.

Receipts from land revenue and from all sources have been, in thousands of rupees :—

	1880-1.	1890-1.	1900-1.	1903-4.
Land revenue . .	10,36	10,37	12,78	13,29
Total revenue . .	12,05	14,91	18,74	19,39

There are three municipalities—BUDAUN, SAHASWĀN, and UJHĀNĪ—besides one 'notified area,' BILSĪ, and seven towns administered under Act XX of 1856. Outside of these, local affairs are managed by the District board, which had an income and expenditure of 1·2 lakhs in 1903-4. Roads and buildings cost Rs. 55,000 in that year.

Budaun contains 18 police stations; and the District Superintendent of police commands a force of 3 inspectors, 97 subordinate officers, and 360 constables, besides 98 municipal and town police, and 2,045

rural and road police. The District jail contained a daily average of 317 prisoners in 1903.

Budaun is the most backward District in the United Provinces as regards the literacy of its population, of whom only 1·6 (2·8 males and 0·2 females) could read and write in 1901. The number of public institutions rose from 160 with 4,686 pupils in 1880–1, to 171 with 7,002 pupils in 1900–1. In 1903–4 there were 168 public schools with 7,909 pupils, of whom 802 were girls, and also 211 private schools with 2,199 pupils. Two of the public schools were managed by Government, and 165 by the District and municipal boards. The total expenditure on education was Rs. 43,000, of which Rs. 35,000 was provided by Local funds and Rs. 8,000 from fees.

There are 10 hospitals and dispensaries, with accommodation for 113 in-patients. In 1903 the number of cases treated was 108,000, of whom 1,500 were in-patients, and 3,500 operations were performed. The expenditure was Rs. 19,000, chiefly met from Local funds.

About 34,000 persons were successfully vaccinated in 1903–4, representing a proportion of 33 per 1,000 of population. Vaccination is compulsory only in the municipalities.

[*District Gazetteer* (1879, under revision); J. S. Meston, *Settlement Report* (1901).]

Budaun Tahsīl.—Head-quarters *tahsīl* of Budaun District, United Provinces, comprising the *parganas* of Budaun and Ujhānī, and lying between 27° 50′ and 28° 12′ N. and 78° 48′ and 79° 19′ E., with an area of 385 square miles. Population increased from 226,673 in 1891 to 243,141 in 1901. There are 377 villages and two towns: BUDAUN (population, 39,031), the District and *tahsīl* head-quarters, and UJHĀNĪ (7,917). The demand for land revenue in 1903–4 was Rs. 2,78,000, and for cesses Rs. 39,000. The density of population, 632 persons per square mile, is the highest in the District. A large portion of the *tahsīl* is situated in the fertile Katehr tract, and is watered by the Sot. In the north-east this slopes to the valley of the Aril, and still contains portions of the famous forest which once surrounded Aonla in Bareilly District. South-west of the Katehr lies a high ridge of sandy land, 3 or 4 miles wide, from which a stretch of precarious alluvial *khādar* reaches to the Ganges on the south-west border. In 1903–4 the area under cultivation was 341 square miles, of which 65 were irrigated. Wells supply two-thirds of the irrigated area.

Budaun Town (*Badāyūn*).—Head-quarters of the District and *tahsīl* of the same name, United Provinces, situated in 28° 2′ N. and 79° 7′ E., on a branch of the Rohilkhand and Kumaun Railway from Bareilly to Soron, and on the road from Bareilly to Muttra. Population (1901), 39,031, of whom 21,995 were Musalmāns and 16,033 Hindus. According to tradition, the town was founded by a mythical Rājā Buddh, an

Ahar by caste, about A.D. 905, or by a descendant of his named Ajayapāla. An inscription, dating probably from the early part of the twelfth century, records the founding of a temple and mentions a list of eleven Rāthor kings reigning at Budaun, which is called Vodāmayūta[1]. Legend relates that the town was taken by Saiyid Sālār in 1028; but the first historical event is its capture by Kutb-ud-dīn in 1196, when the last Hindu king was slain. Budaun then became an important post on the northern boundary of the Delhi empire, and its governors were chosen from distinguished soldiers who had constantly to face revolts by the turbulent Katehriyā Rājputs. Two of its governors in the thirteenth century, Shams-ud-dīn Altamsh and his son Rukn-ud-dīn Fīroz, passed from Budaun to the throne at Delhi. In the fifteenth century Mahābat Khān, the governor, imitated the example of the Jaunpur ruler and became independent for a time. About 1450 Alā-ud-dīn, the last of the Saiyid kings of Delhi, after abdicating the throne, retired to Budaun, where he lived for twenty-eight years. In 1571 the town was destroyed by fire; and in the reign of Shāh Jahān, nearly a century later, the governor of the *sarkār* was transferred to Bareilly, and the importance of Budaun declined. For a time it was included in the State formed early in the eighteenth century by the Nawāb of Farrukhābād; but it then passed to the Rohillas. In 1838 it became the head-quarters of a British District. On the outbreak of the Mutiny in May, 1857, the treasury guard at Budaun rose, and being joined by the townspeople broke open the jail, and burned the civil station. A native government was then established and remained in power till General Penny's victory at Kakrālā in the following April, when the rebel governor fled the city, and order was again re-established.

Budaun stands about a mile east of the river Sot, and consists of two parts, the old and new town. In the former are the remains of the old fort, with massive ramparts once so wide that four carriages could be driven abreast. The Jāma Masjid, built in 1223 by Shams-ud-dīn Altamsh, largely from the materials of the temple referred to above, is an immense building 276 feet long by 216 broad, with a central dome restored in Akbar's time. It stands high and is an imposing feature in the landscape for many miles. Numerous smaller mosques and *dargāhs* remain as memorials of the palmy days of Pathān and Mughal rule[2]. In the neighbourhood are graveyards filled with mouldering tombs, chief among which may be mentioned that of Sultān Alā-ud-dīn and his wife. Budaun is also famous as having been the birthplace of the historian Badāyūnī, the rival of Abul Fazl. The chief modern public buildings are the District courts, the jail, a commodious dispensary, two large *sarais*, and a small leper asylum; and a park is now being laid out. Budaun is a centre for the work of the American

[1] *Epigraphia Indica*, vol. i, p. 63. [2] *Journal, Asiatic Society of Bengal*, vol. xli.

Methodist Mission in the District. The municipality was constituted in 1884. During the ten years ending 1900–1 the income averaged Rs. 35,500 and the expenditure Rs. 34,500. In 1903–4 the income was Rs. 57,000, including Rs. 32,000 from octroi and Rs. 15,000 from rents; and the expenditure was Rs. 56,000. The municipality has Rs. 10,000 invested. Budaun is not now a great trade centre; but its former proximity to the railway, as compared with Bilsī, has given it some advantages which may increase now that a line actually passes through it. The grain market, called Carmichaelganj after a former Collector, belongs to the municipality. Papier mâché pen-boxes made here have some reputation. The District school has 160 pupils, a mission school 120, and the *tahsīlī* school 270. The municipality manages 10 schools and aids 16 others, attended by more than 1,000 pupils.

Buddh Gayā (*Bodh Gayā*).—Village in the head-quarters subdivision of Gayā District, Bengal, situated in 24° 42′ N. and 85° 0′ E., about 7 miles south of Gayā town, on the west bank of the Phalgu or Lilājān river. Population (1901), 502. The name signifies either the Gayā of Buddha or the Gayā of the *bodhi* ('enlightenment'). The place is sometimes, however, called Mahābodhi, or 'the great enlightenment,' a name which is also given to the *bodhi-druma* or sacred *pīpal*-tree at Buddh Gayā.

It was under this tree that Sākyamuni, after many years of search after truth, conquered Māra and attained to Buddhahood, i.e. became freed from the circle of rebirths; and worship consequently centred around the *bodhi*-tree from the earliest period of Buddhism. King Asoka (third century B.C.) is said to have erected a temple near this holy tree, and one of the bas-reliefs of the Bhārhut *stūpa* (second century B.C.) gives a representation of the tree and its surroundings as they then were. It shows a *pīpal*-tree, with a *vedi* or stone platform in front, adorned with umbrellas and garlands, and surrounded by some building with arched windows resting on pillars; while close to it stood a single pillar with a Persepolitan capital crowned with the figure of an elephant. When the stone pavement of the present temple was dug up during its restoration, foundations of an older building were discovered beneath it, which, in the opinion of General Cunningham, represent the remains of the original temple built by Asoka. The ancient stone railing which now surrounds the temple certainly belongs for the greater part to about the same time as Asoka's reign; and this railing and the bases of some columns which mark the place where Buddha used to take exercise form the only remains now extant of so early a period. The railing is adorned with various sculptures, among which the larger reliefs generally represent events in Buddha's life or his former births. On one of these pillars, which has been removed from the temple pre-

cincts to the *math* of the *mahant* of Buddh Gayā, there is a figure of the Sun-god standing on his chariot drawn by four horses. The holy tree stands west of the temple. The present one is certainly not of very great age, but it is evidently an offshoot of an older tree; and General Cunningham even found portions of the trunk and roots of a *pīpal*-tree very deep down below the surface. Under its shadow is the ancient *Vajrāsana* or adamantine throne of Buddha, which may belong to about the same time as the railing, though it contains a mutilated inscription of later date. Its outer faces are covered with Brāhmani geese, alternating with the usual honeysuckle ornament, and its upper surface has a geometrical pattern carved upon it. Except for these earlier remains, all the Buddhist sculptures, which have been found in great numbers around the temple, belong to the latest phase of Buddhism in India (A.D. 800 to 1200), and afford a striking illustration of what that religion had become before its final overthrow by the Muhammadans.

The present temple was restored in 1881 by the Bengal Government, and in its main features represents the structure as it must have existed as early as A.D. 635, when the Chinese pilgrim, Hiuen Tsiang, saw it. It consists of a main tower rising to the height of 180 feet in the form of a slender pyramid, which springs from a square platform on the four corners of which are similar towers of smaller size. The outside walls have niches for the reception of statues, and access to the temple is obtained through an eastern gate supported by pillars, which opens on to an anteroom in front of the sanctum. At the western wall of the sanctuary is a *vedi* or altar upon which is placed the principal image, a large mediaeval statue representing Buddha seated under the *bodhi*-tree with various other images on each side. The main figure has been gilded over, and the Hindu custodians of the shrine have marked its forehead with the sectarian mark of the Vaishnavas, in order to represent it as the Buddha incarnation of Vishnu. The worship of this image by Hindus is comparatively recent, and apparently does not date farther back than the restoration of the temple in 1881.

The ground floor is about 20 feet below the modern surface level. Scarcely more than one quarter of the old site has been excavated; but, as far as can be judged from the present state of the ruins, the entire area of the main enclosure of the temple has been laid open. It was filled with an enormous amount of smaller shrines, *chaityas*, votive *stūpas*, and the like, the foundations of which are still extant. South of the temple is an old tank, called Buddhpokhar; and north-west, at a place now called Amar Singh's Fort, remains of the ancient monastery of Buddh Gayā have been discovered. Very little of these remains can, however, be seen at present, and here as in other places further excavation on a systematic scale may yield valuable results.

Apart from the temple and its surroundings, the remains near Buddh Gayā are scanty. There are none to be found at the spot where, according to tradition, Buddha was sheltered by the serpent-king Muchilinsa, and where Hiuen Tsiang saw a statue representing the scene; but at Bakraur, where some of the pillars of the Buddh Gayā railing have been placed inside a small Hindu *math*, are the remains of a *stūpa* which marked the site where Buddha once appeared in the shape of an elephant. The so-called Prāgbodhi cave, where Buddha spent some time before he went down to Uruvilvā, the present Buddh Gayā, is situated on the western slope of the Mora hills, midway between Buddh Gayā and Gayā town; and the brick foundations of ancient *stūpas* may be observed from the cave on the hills.

Buddh Gayā is now a place of Hindu as well as of Buddhist worship; and the Hindu pilgrims who offer *pindas* to their ancestors at the holy shrines of Gayā visit it on the fourth day of their pilgrimage and perform the usual propitiatory ceremonies, the principal *vedi* being another *pīpal* tree north of the temple. It cannot now be determined to what age this adoption by the Hindus of a Buddhist site goes back, but it is certainly several centuries old; and it is not improbable that Hindu worship at the place began before the final overthrow of Buddhism, during the syncretistic period which preceded that event.

[L. S. S. O'Malley, *District Gazetteer of Gayā* (Calcutta, 1906); Sir A. Cunningham, *Mahābodhi* (1892); Dr. Rājendralāla Mitra, *Buddh Gayā* (Calcutta, 1878).]

Buddhpur.—Village in the head-quarters subdivision of Mānbhūm District, Bengal, situated in 22° 58′ N. and 86° 42′ E., on the Kāsai river. Population (1901), 160. Extending for two miles along the bank are several ruins of what are thought to have been Jain temples. A number of carved slabs of stone are scattered about; and an extensive collection of octagonal headstones is believed to mark the graves of the early settlers. About 4 miles to the north, at Pākbirā, is a group of temples with a colossal figure, about 9 feet high, supposed to represent one of the Tīrthankaras, or deified saints of the Jains.

Budge-Budge (*Baj-Baj*).—Town in the head-quarters subdivision of the District of the Twenty-four Parganas, Bengal, situated in 22° 29′ N. and 88° 11′ E., on the east bank of the Hooghly river, 14 miles below Calcutta. Population (1901), 13,051. The remains of a fort, which was captured from the forces of Sirāj-ud-daula by Clive in 1756, are still visible. Budge-Budge is a growing place; it is the oil dépôt of Calcutta, and contains a large jute-mill and a cotton-mill. It was constituted a municipality in 1900. The income during the four years ending in 1903–4 averaged Rs. 20,000, and the expenditure Rs. 14,000. In 1903–4 the income was Rs. 24,000, mainly derived from a tax on houses and lands; and the expenditure was Rs. 16,000.

Budhāna Tahsīl.—South-western *tahsīl* of Muzaffarnagar District, United Provinces, lying between 29° 12′ and 29° 26′ N. and 77° 9′ and 77° 42′ E., with an area of 287 square miles. The population increased from 172,688 in 1891 to 197,034 in 1901. There are two towns with a population exceeding 5,000—KĀNDHLA (11,573), and BUDHĀNA (6,664), the *tahsīl* head-quarters; and 149 villages. In 1903–4 the demand for land revenue was Rs. 4,09,000, and for cesses Rs. 50,000. The *tahsīl* is the most thickly populated in the District, supporting 686 persons per square mile, as compared with a District average of 527; it is also the most closely cultivated. The Eastern Jumna Canal and the Deoband branch of the Upper Ganges Canal provide irrigation. In 1903–4 the area under cultivation was 235 square miles, of which 104 were irrigated.

Budhāna Town.—Head-quarters of the *tahsīl* of the same name in Muzaffarnagar District, United Provinces, situated in 29° 17′ N. and 77° 29′ E., 19 miles south-west of Muzaffarnagar town. Population (1901), 6,664. During the Mutiny the place was held by the rebels, but was retaken in September, 1857. It lies close to the Hindan, but the main site is raised, and is fairly healthy. The town is administered under Act XX of 1856, with an income of Rs. 1,000. Besides the *tahsīlī*, it contains three schools and a dispensary.

Būdihāl.—Village in the Hosdurga *tāluk* of Chitaldroog District, Mysore, situated in 13° 37′ N. and 76° 25 E., 16 miles south-east of Hosdurga town. Population (1901), 1,118. The fort was built here about the fifteenth century by a chief who was invested with authority by the king of Vijayanagar. After the fall of that power, the Tarikere chiefs seized the place, but it was taken from them by the Sultān of Bijāpur, and subsequently formed a district of the province of Sīra under the Mughals. The *poligār* of Chitaldroog and the Marāthās in turn held it, until it was taken by Haidar Alī in 1761. The Marāthās again seized it in 1771, but it was recovered in 1774. In 1790 it was once more in the hands of the Marāthās, but was restored at the peace of 1792. It was one of the last places at which the insurgents under the Tarikere *poligār* created disturbances in 1831.

Būdikote.—Village in the Bowringpet *tāluk* of Kolār District, Mysore, situated in 12° 54′ N. and 78° 8′ E., 8 miles south-west of Bowringpet. Population (1901), 1,460. There is a Bāna inscription of the ninth century. Būdikote was the birthplace of Haidar Alī, and formed the *jāgīr* of his father Fateh Muhammad on his appointment as Faujdār of Kolār under the Sūbahdār of Sīra.

Bugti Country.—Tribal area in Baluchistān. *See* MARRI-BUGTI COUNTRY.

Bukkur (*Bakhar*).—Fortified island in the river Indus, in Sukkur District, Sind, Bombay, situated in 27° 43′ N. and 68° 56′ E., between

the towns of Sukkur and Rohri. Population (1901), 8,062. Bukkur is a rock of limestone, oval in shape, 800 yards long by 300 wide, and about 25 feet in height. The channel separating it from the Sukkur shore is not more than 100 yards wide, and, when the river is at its lowest, about 15 feet deep in the middle. In 1903 this channel dried up for the first time on record. The eastern channel, or that which divides it from Rohri, is much broader, being, during the same state of the river, about 400 yards wide, with a depth of 60 feet in the middle. The Government telegraph line from Rohri to Sukkur crosses the river here by the island of Bukkur, and the railway passes by a cantilever bridge over the wider branch. The Lansdowne Bridge, which crosses the Indus via Bukkur, was completed in 1889 at a cost of 38·2 lakhs. The largest span between Bukkur and Rohri is 820 feet. A little to the north of Bukkur, and separated from it by a narrow channel of easy passage, is the small isle of Khwāja Khizr, or Jind Pīr, containing a shrine of much sanctity; while to the south of Bukkur is another islet known as Sādh Bela, covered with foliage, and also possessing some sacred shrines. Almost the whole of the island of Bukkur is occupied by the fortress, the walls of which are double, and from 30 to 35 feet high, with numerous bastions; they are built partly of burnt and unburnt brick, are loopholed, and have two gateways, one facing Rohri on the east, and the other Sukkur on the west. The fort presents a fine appearance from the river, but the walls are now in disrepair. Until 1876, Bukkur was used as a jail subsidiary to that at Shikārpur.

That Bukkur, owing to its insular position, must always have been considered a stronghold of some importance under native rule is evidenced by its being so frequently a bone of contention between different States. So early as 1327, when Sind was an apanage of the Delhi empire, Bukkur seems to have been a place of note, from the fact that trustworthy persons were employed by the emperor Muhammad bin Tughlak to command here. During the rule of the Sammā princes, the fort seems to have changed hands several times, being occasionally under their rule, and at times under that of Delhi. In the reign of Shāh Beg Arghūn, the fortifications of Bukkur appear to have been partially, if not wholly, rebuilt, the fort of Alor being broken up to supply the requisite material. In 1574 the place was delivered up to Keshū Khān, a servant of the Mughal emperor Akbar. In 1736 the fortress fell into the hands of the Kalhora princes, and at a subsequent date into that of the Afghāns, by whom it was retained till captured by Mīr Rustam Khān of Khairpur. In 1839, during the first Afghān War, the fort of Bukkur was ceded by the Khairpur Mīrs to the British, to be occupied by them, and it so remained till the conquest of the whole province in 1843. Bukkur was the principal British arsenal in Sind during the Afghān and Sind campaigns.

Bulandshahr District.—District in the Meerut Division, United Provinces, lying between 28° 4′ and 28° 43′ N. and 77° 18′ and 78° 28′ E., with an area of 1,899 square miles. It is situated in the Doāb or alluvial plain between the Ganges and Jumna, which form its eastern and western boundaries, dividing it from Morādābād and Budaun, and from the Punjab Districts of Delhi and Gurgaon, respectively. On the north and south lie Meerut and Alīgarh Districts. The central portion forms an elevated plain, flanked by strips of low-lying land, called *khādar*, on the banks of the two great rivers. The Jumna *khādar* is an inferior tract, from 5 to 10 miles wide, except in the south, where the river flows close to its eastern high bank. The swampy nature of the soil is increased in the north by the two rivers, Hindan and Bhuriyā, but flooding from the Jumna has been prevented by the embankments protecting the head-works of the Agra Canal. The Ganges *khādar* is narrower, and in one or two places the river leaves fertile deposits which are regularly cultivated. Through the centre of the upland flows the East Kālī Nadī, in a narrow and well-defined valley which suffers from flooding in wet years. The western half contains a sandy ridge, now marked by the Māt branch of the Upper Ganges Canal and two drainage lines known as the Patwai and Karon or Karwan. The eastern portion is drained by another channel called the Chhoiyā. The whole of this tract is a fertile stretch of country, which owes much to the extension of canal-irrigation.

Physical aspects.

The soil is entirely alluvium in which *kankar* is the only stone found, while the surface occasionally bears saline efflorescences.

The flora of the District presents no peculiarities. At one time thick jungle covered with *dhak* (*Butea frondosa*) was common; but the country was denuded of wood for fuel when the East Indian Railway was first opened, and trees have not been replanted. The commonest and most useful trees are the *babūl* and *kīkar* (*Acacia arabica* and *A. eburnia*). The *shīsham* (*Dalbergia Sissoo*), *nīm* (*Melia Azadirachta*), and *pīpal* (*Ficus religiosa*) are also common. In the east the landlords have encouraged the plantation of fine mango groves.

Wild hog and hog deer are common in the *khādar*. Both antelope and *nīlgai* are found in the uplands, but are decreasing owing to the spread of cultivation. The leopard, wolf, and hyena are occasionally met with. In the cold season duck and snipe collect in large numbers on the ponds and marshes. Fish are not much consumed in the District, though plentiful in the rivers.

The climate resembles that of MEERUT DISTRICT, but no meteorological observations are made here, except a record of rainfall. The extension of canal-irrigation has increased malaria, but its effects have been mitigated by the improvement of the drainage system.

The annual rainfall averages about 26 inches, of which 24 inches are usually measured between June 1 and the end of October. Large variations occur in different years, the fall varying from under 15 inches to over 40 inches. There is not much difference between the amounts in different parts of the District, but the eastern half receives slightly more than the western.

History.

The early traditions of the people assert that the modern District of Bulandshahr formed a portion of the Pāndava kingdom of Hastināpur, and that after that city had been cut away by the Ganges the tract was administered by a governor who resided at the ancient town of AHĀR. Whatever credence may be placed in these myths, we know from the evidence of an inscription that the District was inhabited by Gaur Brāhmans and ruled over by the Gupta dynasty in the fifth century of our era. Few glimpses of light have been cast upon the annals of this region before the advent of the Muhammadans, with whose approach detailed history begins for the whole of Northern India. In 1018, when Mahmūd of Ghazni arrived at Baran (as the town of Bulandshahr is sometimes called to the present day), he found it in possession of a native prince named Har Dat. The presence of so doughty an apostle as Mahmūd naturally affected the Hindu ruler; and accordingly the Rājā himself and 10,000 followers came forth, says the Musalmān historian, 'and proclaimed their anxiety for conversion and their rejection of idols.' This timely repentance saved their lives and property for the time; but Mahmūd's raid was the occasion for a great immigration towards the Doāb of fresh tribes who still hold a place in the District. In 1193 Kutb-ud-dīn appeared before Baran, which was for some time strenuously defended by the Dor Rājā, Chandra Sen; but through the treachery of his kinsman, Jaipāl, it was at last captured by the Musalmāns. The traitorous Hindu accepted the faith of Islām and the Chaudhrīship of Baran, where his descendants still reside, and own some small landed property. The fourteenth century is marked as an epoch when many of the tribes now inhabiting Bulandshahr first gained a footing in the region. Numerous Rājput adventurers poured into the defenceless country and expelled the Meos from their lands and villages. This was also the period of the early Mongol invasions; so that the condition of the Doāb was one of extreme wretchedness, caused by the combined ravages of pestilence, war, and famine, with the usual concomitant of internal anarchy. The firm establishment of the Mughal dynasty gave a long respite of tranquillity and comparatively settled government to these harassed provinces. They shared in the administrative reconstruction of Akbar; their annals are devoid of incident during the flourishing reigns of his great successors. Here, as in so many other Districts, the proselytizing zeal of Aurangzeb has left permanent effects

in the large number of Musalmān converts; but Bulandshahr was too near the court to afford much opportunity for those rebellions and reconquests which make up the chief elements of Mughal history. During the disastrous decline of the imperial power, which dates from the accession of Bahādur Shāh in 1707, the country round Baran was a prey to the same misfortunes which overtook all the more fertile provinces of the empire. The Gūjars and Jāts, always to the front upon every occasion of disturbance, exhibited their usual turbulent spirit; and many of their chieftains carved out principalities from the villages of their neighbours. But as Baran was at this time a dependency of Koil, it has no proper history of its own during the eighteenth century, apart from that of ALĪGARH DISTRICT. Under the Marāthā rule it continued to be administered from Koil; and when that town with the adjoining fort of Alīgarh was captured by the British in 1803, Bulandshahr and the surrounding country were incorporated in the newly formed District.

The Mutiny of 1857 was ushered in at Bulandshahr by the revolt of the 9th Native Infantry, which took place on May 21, shortly after the outbreak at Alīgarh. The officers were compelled to fly to Meerut, and Bulandshahr was plundered by a band of rebellious Gūjars. Its recovery was a matter of great importance, as it lies on the main road from Agra and Alīgarh to Meerut. Accordingly, a small body of volunteers was dispatched from Meerut for the purpose of retaking the town, which they were enabled to do by the aid of the Dehra Gurkhas. Shortly afterwards, however, the Gurkhas marched off to join General Wilson's column, and the Gūjars once more rose. Walīdād Khān of Mālāgarh put himself at the head of the movement, which proved strong enough to drive the small European garrison out of the District. From the beginning of July till the end of September Walīdād held Bulandshahr without opposition, and commanded the line of communication with Agra. Meantime internal feuds went on as briskly as in other revolted Districts, the old proprietors often ousting by force the possessors of their former estates. But on September 25 Colonel Greathed's flying column set out from Ghāziābād for Bulandshahr, whence Walīdād was expelled after a sharp engagement and forced to fly across the Ganges. On October 4 the District was regularly occupied by Colonel Farquhar, and order was rapidly restored. The police were at once reorganized, while measures of repression were adopted against the refractory Gūjars, many of whom still continued under arms. It was necessary to march against rebels in Etah early in 1858; but the tranquillity of Bulandshahr itself was not again disturbed. Throughout the progress of the Mutiny, the Jāts almost all took the side of Government, while the Gūjars and Musalmān Rājputs proved our most irreconcilable enemies.

Two important copperplate inscriptions have been found in the District, one dated A. D. 465–6 of Skanda Gupta, and another giving the lineage of the Dor Rājās. There are also ancient remains at Ahār and Bulandshahr. A *dargāh* was built at Bulandshahr in 1193, when the last Dor Rājā was defeated by the Muhammadans; and the town contains other buildings of the Muhammadan period.

Population.

The number of towns and villages in the District is 1,532. Population has increased considerably. The numbers at the last four enumerations were as follows: (1872) 937,427, (1881) 924,822, (1891) 949,914, and (1901) 1,138,101. The temporary decline between 1872 and 1881 was due to the terrible outbreak of fever in 1879, which decimated the people. The increase of nearly 20 per cent. during the last decade was exceeded in only one District in the Provinces. There are four *tahsīls*—ANŪPSHAHR, BULANDSHAHR, SIKANDARĀBĀD, and KHURJA—the head-quarters of each being at a town of the same name. These four towns are also municipalities, and the last three are the chief places in the District.

The principal statistics in 1901 are given below:—

Tahsīl.	Area in square miles.	Number of Towns.	Number of Villages.	Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
Anūpshahr . .	444	4	378	278,152	626	+ 22·0	6,325
Bulandshahr .	477	5	379	332,262	696	+ 17·8	9,612
Sikandarābād .	516	7	404	260,849	505	+ 16·2	5,046
Khurja . .	462	7	348	266,838	577	+ 20·7	7,176
District total	1,899	23	1,509	1,138,101	599	+ 19·8	28,159

In 1901 Hindus numbered 900,169, or 79 per cent. of the total; Musalmāns, 217,209, or 19 per cent.; Aryas, 12,298; and Christians, 4,528. The number of Aryas is greater than in any other District in the Provinces, and the Samāj has twenty-seven lodges or branches in Bulandshahr. Practically all the inhabitants speak Western Hindī. In the north the dialect is Hindustāni, while in the south Braj is commonly used.

Among Hindus the most numerous castes are Chamārs (leather-workers and labourers), 183,000, who form one-fifth of the total; Brāhmans, 113,000; Rājputs, 93,000; Jāts, 69,000; Lodhas (cultivators), 64,000; Baniās, 56,000; and Gūjars, 44,000. The Brāhmans chiefly belong to the Gaur clan, which is peculiar to the west of the Provinces and the Punjab, while Jāts and Gūjars also are chiefly found in the same area. The Lodhas, on the other hand, inhabit the central Districts of the Provinces. The Meos or Mīnās and

Mewātīs are immigrants from Mewāt; and among other castes peculiar to this and a few other Districts may be mentioned the Orhs (weavers), 4,000, and Aheriās (hunters), 4,000. The Musalmāns of nominally foreign extraction are less numerous than those descended from Hindu converts. Shaikhs number 24,000; Pathāns, 17,000; Saiyids, 6,000; and Mughals only 3,000; while Musalmān Rājputs number 34,000; Barhais (carpenters), 15,000; Telis (oil-pressers), 11,000; and Lohārs (blacksmiths), 11,000. About 51 per cent. of the population are supported by agriculture. Rājputs, both Musalmān and Hindu, Jāts, Saiyids, and Baniās are the largest landholders; and Rājputs, Brāhmans, and Jāts the principal cultivators. General labour supports 11 per cent. of the total population, personal service 9 per cent., weaving 3 per cent., and grain-dealing 3 per cent.

Of the 4,480 native Christians in 1901, 4,257 belonged to the American Methodist Episcopal Church, which started work here in 1887. Most of them are recent converts, chiefly from the lower castes. The Zanāna Bible and Medical Mission and the Church Missionary Society have a few stations in the District.

Agriculture.

Excluding the Jumna and Ganges *khādars*, the chief agricultural defect is the presence of barren *ūsar* land covered with saline efflorescences called *reh*, which occurs in badly-drained localities, and spreads in wet years. The District is remarkable for the absence of grazing-grounds, fodder-crops being largely grown. Where conditions are so uniform, the chief variations are due to the methods employed by different castes, among whom Ahīrs and Jāts take the first place. The Ahīrs devote most attention to the area near the village site and prefer well-irrigation, while the Jāts do equal justice to all good land and use canal water judiciously. The Lodhas come next and are as industrious as the Jāts, but lack their physique. Gūjars are usually inferior.

The tenures are those common to the United Provinces; but the District is marked by the number of large estates. Out of 3,440 *mahāls* at the last settlement, 2,446 were *zamīndāri* or joint *zamīndāri*, 546 *bhaiyāchārā*, and 448 *pattīdāri* or imperfect *pattīdāri*. The main statistics of cultivation in 1903-4 are shown below, in square miles:—

Tahsīl.	Total.	Cultivated.	Irrigated.	Cultivable waste.
Anūpshahr . .	444	339	158	38
Bulandshahr . .	477	376	191	46
Sikandarābād . .	516	358	150	85
Khurja . . .	462	345	152	72
Total	1,899	1,418	651	241

The chief food-crops and the area occupied by each in square miles were: wheat (424), gram (199), maize (188), barley (227), *jowār* (156), and *bājra* (121). The area under maize has trebled during the last twenty-five years. *Bājra* is chiefly grown on inferior soil in the Sikandarābād and Khurja *tahsīls*. The other important crops are cotton (103) and sugar-cane (63), both of which are rapidly increasing in importance. On the other hand, the area under indigo has declined from 120 square miles in 1885 to 25 in 1903–4.

From 1870 to 1874 a model farm was maintained at Bulandshahr, and attempts were made to introduce Egyptian cotton; but these were not successful. The chief improvements effected have been the extension of canal-irrigation, and its correction by means of drainage cuts. Much has also been done to straighten and deepen the channels of the rivers described above, especially the East Kālī Nadī. These have led to the extended cultivation of the more valuable staples. Very few advances have been made under the Agriculturists' Loans Act, and between 1891 and 1900 only Rs. 30,000 was given under the Land Improvement Loans Act. In 1903–4 the loans were Rs. 1,700. The agricultural show held annually at Bulandshahr town has done much to stimulate interest in small improvements.

An attempt was made in 1865 to improve the cattle by importing bulls from Hariāna; but the *zamīndārs* were not favourable. The ordinary cattle are poor, and the best animals are imported from Rājputāna, Mewār, or Bijnor. Horse-breeding has, however, become an important pursuit, and there are twenty stallions owned by Government in this District. The *zamīndārs* of all classes are anxious to obtain their services, and strong handsome colts and fillies are to be seen in many parts. Mules are also bred, and ten donkey stallions have been supplied. Since 1903 horse and mule-breeding operations have been controlled by the Army Remount department. Sheep and goats are kept in large numbers, but are of the ordinary inferior type.

The District is exceptionally well provided with means of irrigation. The main channel of the Upper Ganges Canal passes through the centre from north to south. Near the eastern border irrigation is supplied by the Anūpshahr branch of the same canal, while the western half is watered by the Māt branch. The Lower Ganges Canal has its head-works in this District, leaving the right bank of the Ganges at the village of Naraura. Most of the wells in use are masonry, and water is raised almost universally in leathern buckets worked by bullocks. In 1903–4 canals irrigated 323 square miles and wells 310. Other sources are insignificant.

Salt was formerly manufactured largely in the Jumna *khādar*, but none is made now. The extraction of sodium sulphate has also been

forbidden. There are sixty factories where crude saltpetre is produced, and one refinery. Where *kankar* occurs in compact masses, it is quarried in blocks and used for building purposes.

Trade and communications.

Till recently Bulandshahr was one of the most important indigo-producing Districts in the United Provinces. There were more than 120 factories in 1891; but the trade has fallen off considerably, and in 1902 there were only 47, which employed about 3,800 hands. Cotton is ginned and pressed at 12 factories, which employ more than 900 hands; and this industry is increasing. The owners of the factories have imported the latest machinery from England. Other manufactures are not of great importance; but the calico-printing of JAHĀNGĪRĀBĀD, the muslins of SIKANDARĀBĀD, the pottery of KHURJA, the rugs of JEWAR, and the wood-carving of BULANDSHAHR and SHIKĀRPUR deserve mention for their artistic merits. There is also a flourishing glass industry in the Bulandshahr *tahsīl*, where bangles and small phials and bottles are largely made. Cotton cloth is woven as a hand industry in many places.

Grain and cotton form the principal exports; the weight of cleaned cotton exported is nearly 4,000 tons, having doubled in the last twenty-five years. The imports include piece-goods, metals, and salt. Anūpshahr is a dépôt for the import of timber and bamboos rafted down the Ganges; but Khurja and Dibai have become the largest commercial centres, owing to their proximity to the railway. Local trade is carried on at numerous small towns, where markets are held once or twice a week.

The East Indian Railway runs from south to north through the western half of the District. For strategic reasons it was built on the shortest possible alignment, and thus passes some distance from the principal towns; but a branch line is under construction, which will connect Khurja and Bulandshahr and join the Oudh and Rohilkhand Railway at Hāpur in Meerut District. A branch of the Oudh and Rohilkhand Railway from Alīgarh to Morādābād and Bareilly crosses the south-east corner.

There are 163 miles of metalled and 495 miles of unmetalled roads. The whole length of metalled roads is in charge of the Public Works department, but the cost of 109 miles of these, and the whole cost of the unmetalled roads, is met from Local funds. Avenues of trees are maintained on 257 miles. The principal line is that of the grand trunk road from Calcutta to Delhi, branches of which leave Bulandshahr for Meerut and Anūpshahr. The only parts where communications are defective are the northern Jumna *khādar* and the north-eastern and south-eastern corners of the District.

Bulandshahr shared in the many famines which devastated the

Upper Doāb before British rule, and during the early years of the nineteenth century scarcity occurred several times. In 1837 famine was severe, and its effects were increased by immigration from Hariāna and Mārwār and the Districts of Etāwah and Mainpurī. The worst-affected tracts were the areas along the Jumna; but the construction of the grand trunk road provided employment for many, and other works were opened. In 1860 the same tracts suffered, being largely inhabited by Gūjars, still impoverished owing to their lawlessness in the Mutiny. The Māt branch canal was started as a relief work. About Rs. 32,000 was spent on relief and Rs. 50,000 advanced for purchase of bullocks and seed, much of which was repaid later, and spent in constructing dispensaries. In 1868-9, though the rains failed, there was a large stock of grain, and the spread of irrigation enabled spring crops to be sown. In 1877 and 1896-7 no distress was felt except among immigrants, and able-bodied labourers could always find work. In the latter period alone 1,518 wells were made, and the high price of grain was a source of profit.

Famine.

The ordinary staff consists of a Collector, assisted by one member of the Indian Civil Service and three Deputy-Collectors recruited in India. There is a *tahsīldār* at the head-quarters of each of the four *tahsīls*. Bulandshahr is also the head-quarters of an Executive Engineer of the Upper Ganges Canal.

Administration.

For purposes of civil jurisdiction the District is divided between two Judgeships. The Sikandarābād *tahsīl* belongs to the *munsifī* of Ghāziābād in Meerut District, and appellate work is disposed of by the Judge of Meerut. The rest of the District is divided into two *munsifīs*, with head-quarters at Bulandshahr and Khurja, subordinate to the Judge of Alīgarh. The additional Sessions Judge of Alīgarh exercises criminal jurisdiction over Bulandshahr. The District has a bad reputation for crime, cattle-theft being especially common. Murders, robberies, and dacoities are also numerous. The Gūjars are largely responsible for this lawlessness, being notorious for cattle-lifting.

Part of the District was acquired by cession from the Nawāb Wazīr of Oudh in 1801, and part was conquered from the Marāthās in 1803. For twenty years the area now included lay partly in Alīgarh, and partly in Meerut or South Sahāranpur Districts. In 1819, owing to the lawlessness of the Gūjars, a Joint-Magistrate was stationed at Bulandshahr, and in 1823 a separate District was formed. The early land revenue settlements were of a summary nature, each lasting one, three, four, or five years. *Talukdārs*, who were found in possession of large tracts, were gradually set aside. Operations under Regulation VII of 1822 were completed in only about 600 villages, and the first regular settlement was made between 1834 and 1837. The next settlement was commenced before the Mutiny, and was completed in 1865; but the

project for a permanent settlement entailed a complete revision. This showed that there had been an extraordinary rise in rental 'assets,' which was partly due to survey errors, partly to concealments at the time of settlement, and partly to an increase in the rental value of land. The idea of permanently fixing the revenue was abandoned, and the demand originally proposed was sanctioned, with a few alterations, yielding 12·4 lakhs. The 'assets,' of which the revenue formed half, were calculated by fixing standard rent rates for different classes of soil. These rates were derived partly from average rents and partly from valuations of produce. The latest revision of settlement was completed between 1886 and 1889, and was notorious for its results. The assessment was to be made on the actual rental 'assets'; but the records were found to be unreliable on account of the dishonesty of many landlords, who had deliberately falsified the *patwāris'* papers, thrown land out of cultivation, and stopped irrigation. The tenants, who had been treated harshly and not allowed to acquire occupancy rights, themselves came forward to expose the fraud. Large numbers of rent-rolls were entirely rejected, and the villages they related to were valued at circle rates. The circle rates were obtained by an analysis of rents believed to be genuine. While the settlement of most of the District was confirmed for thirty years, a number of villages were settled for shorter terms to enable the settlement to be made on the basis of a fair area of cultivation. The total demand was fixed at 19·8 lakhs, which has since risen to 20 lakhs. The incidence per acre is Rs. 1-15-0, varying in different parts of the District from Rs. 1-2-0 to Rs. 2-9-0.

Collections on account of land revenue and total revenue have been, in thousands of rupees:—

	1880-1.	1890-1.	1900-1.	1903-4.
Land revenue . .	12,31	18,40	19,81	19,85
Total revenue . .	13,81	24,66	27,99	28,02

There are four municipalities—BULANDSHAHR, ANŪPSHAHR, SIKANDARĀBĀD, and KHURJA—and 19 towns are administered under Act XX of 1856. Outside these, local affairs are managed by the District board. In 1903-4 the income of the latter was 1·9 lakhs, chiefly derived from local rates. The expenditure was 2 lakhs, of which Rs. 96,000 was spent on roads and buildings.

In 1903 the District Superintendent of police was assisted by four inspectors. The force numbered 106 officers and 355 constables, besides 369 municipal and town police, and 1,979 village and road police. The District jail contained an average of 232 prisoners in the same year.

Bulandshahr is backward in literacy, and only 2·5 per cent. (4·5 males and 0·3 females) of the population could read and write in 1901. In

1881 there were 130 public schools with 4,486 pupils, and the numbers rose in 1901 to 171 schools with 7,989 pupils. In 1903–4 there were 187 public schools with 10,801 pupils, of whom 57 were girls, and also 271 private schools with 4,157 pupils. The total expenditure on education was Rs. 49,000, of which Local and municipal funds supplied Rs. 38,000, and fees Rs. 11,000. Of the public schools, two were managed by Government and 117 by the District and municipal boards.

The District has nine hospitals and dispensaries, with accommodation for 109 in-patients. In 1903 the number of cases treated was 101,000, of whom 2,300 were in-patients, and 8,400 operations were performed. The expenditure in the same year was Rs. 18,000, chiefly from Local funds.

In 1903–4, 39,000 persons were successfully vaccinated, representing a proportion of 34 per 1,000 of population. Vaccination is compulsory only in the municipalities.

[F. S. Growse, *Bulandshahr* (Benares, 1884); T. Stoker, *Settlement Report* (1891); H. R. Nevill, *District Gazetteer* (1903).]

Bulandshahr Tahsīl.—Central *tahsīl* of Bulandshahr District, United Provinces, comprising the *parganas* of Baran, Agautā, Siyānā, and Shikārpur, and lying between 28° 14′ and 28° 43′ N. and 77° 43′ and 78° 13′ E., with an area of 477 square miles. The population rose from 281,928 in 1891 to 332,262 in 1901. There are 379 villages and five towns, including BULANDSHAHR (population, 18,959), the District and *tahsīl* head-quarters, SHIKĀRPUR (12,249), SIYĀNĀ (7,615), GULAOTHĪ (7,208), and AURANGĀBĀD (5,916). The demand for land revenue in 1903–4 was Rs. 5,65,000, and for cesses Rs. 94,000. This is the finest *tahsīl* in the District, and the density of population, 696 persons per square mile, is considerably above the District average (599). The East Kālī Nadī flows from north to south through the western portion of the *tahsīl*, and formerly caused much damage by flooding in wet years. It has been straightened and deepened, and is no longer used as a canal escape, with very beneficial results. The northern *pargana* of Agautā is the most fertile. There are marshy tracts in the north-east of the *tahsīl*, and sandy areas in the south-east. Irrigation is supplied by the Upper Ganges Canal east of the Kālī Nadī. In 1903–4 the area under cultivation was 376 square miles, of which 191 were irrigated. Well-irrigation supplies two-thirds of this area, and is more important here than in the other *tahsīls* of the District.

Bulandshahr Town.—Head-quarters of the District and *tahsīl* of the same name, United Provinces, situated in 28° 15′ N. and 77° 52′ E., on the grand trunk road, 10 miles east of the Chola station on the East Indian Railway. Population (1901), 18,959, of whom 9,139 are Hindus and 9,071 Musalmāns. The old name of the town was Baran, and it received the nickname Unchānagar or Bulandshahr

('high town') from its elevated position on a bank near the Kālī Nadī. It is a place of considerable antiquity, and is said to have been founded by a Tomar chief of Ahār named Parmāl, or according to another account by a man named Ahibaran, from whom its name was derived. Buddhist remains of the fifth to seventh centuries have been found here, besides coins of much older date. In the eleventh century the town was the head-quarters of Har Dat, a Dor chieftain who ruled in this part of the Doāb, with territory extending as far as Hāpur and Meerut. In 1018 Mahmūd of Ghazni crossed the Jumna and reached Baran. In the words of the Persian historian, Har Dat 'reflected that his safety would be best secured by conforming to the religion of Islām, since God's sword was drawn from the scabbard and the whip of punishment was uplifted. He came forth, therefore, with 10,000 men, who all proclaimed their anxiety for conversion and their rejection of idols.' The town was given back to Har Dat, but from a copperplate inscription the Dors appear to have been superseded for a time. They were restored; and Chandra Sen, the last Hindu ruler, died while gallantly defending his fort against Kutb-ud-dīn, the general of Muhammad Ghorī, in 1193. The town is famous in later times as the birthplace of the historian, Ziā-ud-dīn Barnī, who flourished in the first half of the fourteenth century. There are a few tombs and mosques of the Muhammadan period, but none of importance. At the commencement of British rule, Bulandshahr was a small town. A few good houses stood on the elevation now known as the Bālāe Kot, and Chamārs and Lodas lived in huts at the base. The establishment of the District head-quarters here caused a rapid growth; and the town has been much improved by the energy and taste of its inhabitants, encouraged by several Collectors, especially the late Mr. F. S. Growse. The Chauk or central market has been provided with a brick terrace and is adorned with carved stone, while the houses and shops surrounding it are elegant specimens of domestic architecture. The rich landlords of the District have also erected several fine houses and gateways and a town hall, all of which are remarkable for the excellence of the stonework they contain. Close to the courts is a handsome building called the Lowe Memorial, in memory of a former Collector, which is used as a shelter for people attending the courts. A fine bathing *ghāt* has been made on the river bank at the eastern entrance of the town. A dispensary and a female hospital were built in 1895. Besides the ordinary District staff, an Executive Engineer of the Ganges Canal has his head-quarters here. There are also stations of the American Methodist, Church Missionary Society, and Zanāna Bible and Medical Missions.

Bulandshahr has been a municipality since 1865. During the ten years ending 1901 the income and expenditure averaged Rs. 18,000. In 1903-4 the income was Rs. 21,000, chiefly derived from octroi

(Rs. 18,000); and the expenditure was Rs. 24,000. Wood-carving of some artistic merit is turned out. The distance from the railway has hitherto prevented the growth of trade, which is of local nature. A line is, however, now under construction. A high school contains more than 200 pupils and a *tahsīli* school 230, while four primary schools have 220 more.

Buldāna District (*Bulthānā*).—District in Berār, lying between 19° 51′ and 21° 1′ N. and 75° 59′ and 76° 52′ E., with an area of 2,809 square miles. This article describes the District as it existed up to 1905, but a statement at the end shows the additions then made. It is bounded on the north by the Pūrna river; on the east by Akola and Bāsim Districts; on the south by the Nizām's Dominions; and on the west by the Nizām's Dominions and the Khāndesh District of the Bombay Presidency. Of the three *tāluks* into which it is divided, Chikhlī and Mehkar are in the Bālāghāt and Malkāpur is in the Pāyānghāt. The general contour of the country in the two former *tāluks* may be described as a succession of small plateaux, highest on the north, where they rise from the central valley of Berār, and gradually decreasing in elevation towards the south. The town of Buldāna is situated near the northern edge of the highest plateau, 2,190 feet above sea-level. Towards the eastern side of the District, the country consists of undulating highlands, favoured with soil of a high quality. The small fertile valleys between the plateaux are watered by streams during the greater part of the year, while wells of particularly good and pure water are numerous. These valleys contain all the best village sites. It is not necessary to describe in detail the Malkāpur *tāluk*, for the description of the Pāyānghāt in the article on BERĀR is in all respects applicable to its conditions.

Physical aspects.

The principal river which takes its rise in the District is the Pengangā, which rises in the hills near Deūlghāt, runs in a south-easterly direction past Mehkar, and then enters Bāsim District. The Pūrna rises in the Ajanta Hills to the west of the District, enters it a little to the north of Deūlgaon Rājā, and traverses the Mehkar *tāluk* in a south-easterly direction, its course running parallel to, and south of, that of the Pengangā. These two rivers are important members of the Godāvari system, but they do not acquire their importance until after they have left the District. The other rivers of Buldāna are the Nalgangā, the Biswa or Vishvagangā, and the Ghan, all of which rise near the northern edge of the Buldāna plateau, and flow southwards into the Pūrna of the Berār valley, which is not to be confounded with the Godāvari Pūrna already mentioned.

The District contains the only natural lake in Berār, the salt lake of LONĀR, situated in the south of the Mehkar *tāluk*.

The two northern *tāluks* are covered with the Deccan trap flow, which is, however, overlaid nearly everywhere, but especially in the valleys, with rich soil of varying depth. The hollow in which the Lonār lake lies exhibits some of the characteristics of a volcanic crater, but is believed to be due to a gaseous explosion, which occurred some time after the deposit of the trap. The Malkāpur *tāluk*, beyond the lower slopes of the Buldāna plateau, is covered with a deep layer of rich and exceedingly fertile black loam.

The vegetation of the forest area will be described in the account of the forests. In cultivated tracts the commonest trees are the mango, the *mahuā* (*Bassia latifolia*), the *pīpal* (*Ficus religiosa*), the banyan, the *babūl* (*Acacia arabica*), and the *hiwar* (*Acacia leucophloea*). The weed vegetation in cultivated ground is that characteristic of the Deccan generally, and includes small *Compositae*, *Leguminosae*, *Rubiaceae*, and *Malvaceae*.

In the hills, bears, tigers, leopards, hyenas, wolves, *sāmbhar*, *nīlgai*, and wild hog are found; in the valleys wild hog and antelope; and, about the banks of the Pūrna, spotted deer and *nīlgai*. The only monkey in the District is the *langūr*.

The climate of the Malkāpur *tāluk* is intensely hot and dry in the months of March, April, and May; but the nights are usually cool. For the next four months the temperature is considerably lower, but occasionally the combination of fairly high temperatures with humidity has an enervating effect. In the *tāluks* of Chikhlī and Mehkar, which are situated in the Bālāghāt, the climate is cooler than that of Malkāpur; the hot season sets in later, and the heat is never so intense as in the Pāyānghāt. Buldāna is, owing to its elevation, the coolest and most pleasant station in Berār. The rainy season in the Bālāghāt *tāluks* is temperate and pleasant, and the cold season throughout the District, particularly in the Bālāghāt *tāluks*, is cool and invigorating.

In respect of rainfall the District is divided into two natural divisions: the Malkāpur *tāluk* in the Pāyānghāt, and the Chikhlī and Mehkar *tāluks* in the Bālāghāt. Rainfall statistics for Malkāpur are not available, but the figure given for Akola (34 inches) may be accepted as correct for this area. In the *tāluks* of the Bālāghāt the rainfall is heavier, that recorded in 1901, which was a normal year, being 44 inches. For some years past there has been a failure, either partial or complete, of the late rains.

History.

Buldāna, though it has occasionally been the scene of historical events, has little or no connected history of its own. ROHANKHED has been the site of two battles: one fought in 1437 between Khalaf Hasan Basri, commanding the army of Alā-ud-dīn Shāh Bahmani II, and Nasīr Khān Fārūki, Sultān of Khandesh; and the other in 1590, between Burhān Nizām Shāh

and Jamāl Khān the Mahdavī, who supported the claims of Ismail to the throne of Ahmadnagar against those of his father Burhān. Burhān was victorious and Jamāl Khān was slain. In 1724 Shakarkhelda was the scene of the battle to which it owes its present name of FATHKHELDA. Mubāriz Khān, governor of Mālwā, instigated by a party in the Mughal court at Delhi, invaded Berār and attacked Asaf Jāh, the first Nizām. Asaf Jāh gained a complete victory and Mubāriz Khān and his two sons fell. This battle established the virtual independence of the Nizāms in the Deccan. Daulat Rao Sindhia and Raghujī Bhonsla were encamped at Malkāpur when, in August, 1803, they allowed the British envoy to depart and received General Wellesley's declaration of war. A month or two later General Wellesley traversed the District while pursuing them from Assaye to Argaon. The condi tion of the country was at this time very unsatisfactory. During the next fifty years there was some improvement; but the local officials were seldom strong enough to keep the peace, and the town of Malkāpur was more than once the scene of faction fights which arose out of religious disputes.

After the Assignment in 1853 Buldāna formed part of the West Berār District, but was formed in 1864 into an independent charge, styled the South-west Berār District—a clumsy designation which was changed in the following year to the Mehkar District. In 1867 Buldāna was selected as the head-quarters of the District, to which it thenceforth gave its name.

Lonār and Mehkar contain two of the finest Hemādpanti temples in Berār, and there is an inferior temple in the same style at Kothalī. The mosques of Fathkhelda and Rohankhed were built in 1581 and 1582, evidently from the designs of one architect, by Khudāwand Khān the Mahdavī, the supporter of Jamāl Khān and the young Ismail Nizām Shāh.

Population.

The number of towns and villages in the District is 876. The population at each of the last four enumerations has been: (1867) 366,309, (1881) 439,763, (1891) 481,021, and (1901) 423,616. The decline in 1901 was due to the famine of 1899–1900. The District is divided into the three *tāluks* of CHIKHLĪ, MEHKAR, and MALKĀPUR, the head-quarters of which are at the places from which each is named. The chief towns are MALKĀPUR, NĀNDŪRA, and DEŪLGAON RĀJĀ.

The table on the next page gives particulars of area, towns and villages, and population in 1901.

The District stands third among the six Districts of Berār in the density of its population, the two Bālāghāt *tāluks* being less densely populated than the Pāyānghāt *tāluk* of Malkāpur. More than 90 per cent. of the people are Hindus. The language of the District is

Marāthī; but the Musalmāns, who number 34,579, speak a corrupt dialect of Urdū, which is generally understood by all.

Tāluk.	Area in square miles.	Number of		Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
		Towns.	Villages.				
Chikhlī	1,009	3	269	129,590	128	−13·6	5,356
Malkāpur	792	2	288	173,234	219	− 2·6	7,782
Mehkar	1,008	1	313	120,792	120	−26·7	4,156
District total	2,809	6	870	423,616	156	−11·9	17,294

The Kunbīs (162,000) are the most numerous caste in Buldāna, as in other Districts of Berār, and are more numerous in this District than in any other except Akola, and proportionately more numerous than in Akola. The Mahārs (50,000) come second in point of numbers, and the Musalmāns (35,000) third. Mālīs number 27,000; Brāhmans, 12,000; Rājputs, 9,000; Telis, 9,000; and Banjārās, 4,000. Buldāna, like all other parts of Berār, is essentially an agricultural District, as is indicated by the very great preponderance of the agricultural castes. Of the total population nearly 74 per cent. are supported by agriculture and 13 per cent. by industries.

There are three Christian missions in the District, the Church Missionary Alliance, the Pentecostal Mission, and the Free Church Mission. Of the 178 Christians enumerated in 1901, 149 were natives.

Agriculture.

The Mehkar and Chikhlī *tāluks* are situated in the Bālāghāt, and the Malkāpur *tāluk* in the Pāyānghāt. The different agricultural conditions of these two natural divisions are described in the article on Berār. The only characteristic of the District which calls for special notice is the suitability of the rich land in the valleys between the plateaux in the Bālāghāt for the cultivation of *rabi* crops, especially wheat. Owing, however, to the failure of late rains for some years past *rabi* cultivation in the District has declined, and the effect of this failure has naturally been felt more in Buldāna than elsewhere in Berār.

The tenures on which the District is held are almost entirely *ryotwāri*, *jāgīr* villages covering only 90 square miles out of 2,809. The principal agricultural statistics are shown below, areas being in square miles:—

Total.	Cultivated.	Irrigated.	Cultivable waste.	Forest.
2,809	2,270	9	21	335

The staple food-grain is *jowār* (great millet), the area under which in 1903-4 was 495 square miles. The area under cotton, the most profitable crop to the cultivator, was 615 square miles, and oilseeds occupied 205 and wheat 264 square miles.

The increase in the cultivated area during the last thirty years has been less than one per cent., the rich lands in this District being among the first to be reoccupied after the Assignment. It cannot be said that much improvement has been made in methods of cultivation or in the quality of the crops sown. On the contrary, the cultivator has now given up the fine long-stapled cotton for which Berār was formerly well-known, in favour of a coarser but more prolific short-stapled variety. The advantages offered by the Loans Acts were not much appreciated before the famine of 1899-1900; but since that year they have become more generally known. In the three years ending 1902 the total advances amounted to 1·2 lakhs. Increased prosperity rather than any disinclination to apply for loans is responsible for a subsequent fall in the demand.

The principal breeds of cattle are the Khāmgaon variety of the Berāri breed in the Chikhlī *tāluk*, and the Umarda variety elsewhere; but since the famine of 1899-1900 large numbers of cattle of the Sholāpuri and Nimāri breeds have been imported, and in the south of the District the characteristics of the local varieties are much modified by the admixture of blood from cattle found in the northern Districts of Hyderābād State. Buffaloes are chiefly of the Nāgpuri strain, except in the Mehkar *tāluk*, where the Dakhani breed prevails. The ponies, sheep, and goats bred locally are very inferior, and call for no special notice.

Irrigated land in Buldāna, as elsewhere in Berār, bears a very small proportion to the area under cultivation; the 9 square miles irrigated in 1903-4 were supplied entirely from wells, and were devoted chiefly to the raising of garden crops.

Forest lands are divided, as elsewhere in Berār, according as they are reserved for the supply of timber and fuel, for fodder, or for pasture. The area of these classes is 155, 4, and 174 square miles respectively. A belt of forest land of the first class, extending along the Ajanta Hills from west to east, is continuous with the forest lands of Khāmgaon in Akola District. The principal trees are *salai* (*Boswellia thurifera*), *lendia* (*Lagerstroemia parviflora*), *khair* (*Acacia Catechu*), *ber* (*Zizyphus Jujuba*), *chār* (*Buchanania latifolia*), and other species. Teak occurs along the crests of the ridges and in sheltered ravines, in which, as they widen, *palās* (*Butea frondosa*) and other species of little value appear. East of the Malkāpur-Buldāna road, the principal species are *anjan* (*Hardwickia binata*), *salai*, and *khair*. The *ramnas*, or fodder reserves, are grass lands with a scrub growth of

acacia and *palās*; and the tree vegetation of the grazing lands consists of acacias, *palās*, *lendia*, *dhaura* (*Anogeissus latifolia*), *ber*, *chār*, and *tendū* (*Diospyros melanoxylon*).

No minerals are now of economic value. Salts and alkalis were formerly procured by evaporation from the LONAR lake, but the industry has long since been abandoned. In the *Ain-i-Akbarī* it was thus described: 'It [the Lonār lake] contains the essential materials for the manufacture of glass and soap, and saltpetre is here produced and yields a considerable revenue.'

Trade and communication.

Arts and manufactures are unimportant. In the larger villages of the Mehkar *tāluk* cotton cloths and blankets, which command a local sale, are woven on hand-looms, and there are similar looms, but in smaller numbers, in the more accessible *tāluks* of Chikhlī and Malkāpur. The principal industry is naturally the preparation of cotton for the market, and the District contains nine ginning factories and three cotton presses, all worked by steam.

The principal exports are raw cotton, oilseeds, and grain and pulse; and the principal imports are grain and pulse, coal and coke, sugar, and salt. The main trade is with Bombay, whither nearly all the raw cotton is exported by rail, and whence the imports, except coal and coke, are mainly received. The commerce of the District has hitherto been largely carried along the main roads to stations on the Nāgpur branch of the Great Indian Peninsula Railway; but the southern portion of the District is now accessible from Jālna on the Hyderābād and Godāvari Valley Railway, and some of the trade has been diverted to this route, though Bombay still remains its objective. The weekly markets, held almost exclusively at old *pargana* towns, are the important centres of local trade; and the principal classes engaged in commerce are the Mārwāris and the Vānīs, though most classes are represented.

The Nāgpur branch of the Great Indian Peninsula Railway, which traverses the northern portion of the Malkāpur *tāluk* from west to east, has a length in this District of about 28 miles. The total length of metalled roads is 107 miles and of unmetalled roads 82 miles. Except 36 miles of unmetalled roads maintained from Local funds, the rest are in charge of the Public Works department.

Administration.

The District is neither more nor less fortunate than other parts of Berār in respect of liability to famine, and has suffered equally with them in the past. The famine of 1803 was a very severe calamity, and there was then no government in a position to afford any relief. In 1896–7 the District suffered from scarcity, and the famine of 1899–1900 was felt at least as severely in Buldāna as in any part of the province. In July, 1900, when the

famine was at its height, 117,409 persons were on relief works and 39,455 in receipt of gratuitous relief, and it is calculated that 28 per cent. of the cattle died.

Administration.

The three[1] *tāluks*, at the head-quarters of each of which there is a *tahsīldār*, have already been mentioned. Buldāna town, though the head-quarters of the District, is not the head-quarters of a *tāluk*, but is situated in the Chikhlī *tāluk*. The superior staff of the District consists of the usual officers, but the Forest officer has charge also of the forests in Akola District. An Assistant or Extra-Assistant Commissioner, exercising the powers of a first-class magistrate, holds his court at Malkāpur.

For judicial purposes this District forms, with Akola, the Civil and Sessions District of West Berār, in which are stationed a District and Sessions Judge and an Additional District and Sessions Judge. Subordinate Judges hold their courts at Buldāna and Khāmgaon, and Munsifs are stationed at Malkāpur and Mehkar. Serious offences against property occur somewhat more frequently than elsewhere in Berār. Dacoity was very common in times past, owing to the number of Bhīls in the District; and at one time a corps of Hill Rangers, under a British officer, was maintained principally for the purpose of suppressing this class of crime. But organized dacoities by hereditary professional gangs are now a thing of the past, and the condition of the District as regards crime is in no way abnormal.

From the *Ain-i-Akbarī* we learn that in Akbar's reign the demand on account of land revenue in the *parganas* which now compose the District of Buldāna was 12·4 lakhs. At the time of the Assignment in 1853, the demand in these *parganas* was only a little more than 3 lakhs, so much had the province suffered from wars, disturbances, and misgovernment. The demand in 1903–4 was 12·2 lakhs, which sum is absolutely rather lower than Akbar's demand, and relatively very much lighter. The first regular settlement of the District after the Assignment was begun in 1862 in the Malkāpur *tāluk*, and completed in 1870 in the Mehkar *tāluk*, and this settlement was revised between 1891 and 1897. Land revenue at the revised rates of assessment has been levied for some years in the Malkāpur *tāluk*, and since 1900 in Mehkar; but the new rates have only just been applied to Chikhlī, where their introduction was delayed owing to the effects of the famine of 1899–1900. So far as 'dry' land is concerned, the new assessment has an average incidence of 15 annas 9 pies per acre, varying from 8 annas to Rs. 2–12–0. Land irrigated by channels from streams and tanks is assessed at a maximum combined soil and water rate of Rs. 8 per acre. Land served by wells sunk before the original settlement pay the highest rate levied on 'dry' land in the village in which it is situated,

[1] The District now (1907) contains five *tāluks*.

but should the well have been made subsequently the land is treated in all respects as 'dry' land. Rice lands are assessed at a maximum rate of Rs. 6 per acre.

Collections on account of land revenue and revenue from all sources have been, in thousands of rupees:—

	1880-1.	1890-1.	1900-1.	1903-4.
Land revenue . .	9,48	10,49	11,21	11,04
Total revenue . .	11,33	15,31	16,15	15,35

Outside the municipality of Buldāna, local affairs are managed by the District board and the *tāluk* boards subordinate to it. The expenditure of these in 1903-4 was Rs. 98,000, of which Rs. 34,000 was spent on public works and Rs. 20,000 on education. The chief source of income is the land cess.

The District Superintendent of police has control over the police throughout the District, excepting those on the railway line in the Malkāpur *tāluk*, who are subordinate to the District Superintendent of Akola. The District contains 26 police stations, including town stations. The only jail is at Buldāna, which contained in 1903-4 a daily average of 56 prisoners.

Buldāna stands fourth among the six Districts of Berār in regard to the literacy of its population, of whom 4 per cent. (8·0 males and 0·1 females) were able to read and write in 1901. In 1903-4 the District contained 115 public, 69 aided, 7 unaided, and 3 private schools, with a total of 8,209 pupils, of whom 6,087 were in public schools and 369 were girls. Of the 115 institutions classed as public, all, except three managed by the Buldāna municipality, were under the District board. The great majority of the pupils under instruction were only in primary classes, and no girls had advanced beyond that stage. Education has, however, made great progress in the District, though female education is not yet appreciated. Of the male population of school-going age more than 9 per cent., and of the female population of the same age 0·6 per cent., were in the primary stage of instruction. The total expenditure on education in 1903-4 was Rs. 73,000, of which Rs. 4,000 was derived from fees.

The District possesses one hospital and seven dispensaries, with accommodation for 44 male and 10 female in-patients. In 1903 the number of cases treated was 56,203, of whom 850 were in-patients, and 1,983 operations were performed. The expenditure was Rs. 14,000, the greater portion of which was met from Provincial revenues.

In 1903-4 the proportion of persons successfully vaccinated was 39·1 per 1,000, the mean for the province being 36·6. Vaccination is compulsory only in the Buldāna municipality.

On the reconstitution of the six Districts of Berār in August, 1905, Buldāna received the Khāmgaon and Jālgaon *tāluks* from Akola District. The present area of Buldāna District is 3,662 square miles, and the population of that area in 1901 was 613,756.

[F. W. Francis, *Tāluk Settlement Reports*; *Malkāpur*, *Khāmgaon*, and *Jālgaon* (1892); *Chikhlī* (1896); and *Mehkar* (1898).]

Buldāna Town.—Head-quarters of the District of the same name in Berār, situated in 20° 32′ N. and 76° 14′ E., 2,190 feet above sea-level. Population (1901), 4,137. The municipality was established in 1893. The receipts and expenditure from 1894 to 1901 averaged Rs. 12,000. The income in 1903–4 was Rs. 12,300, mainly derived from taxes and cesses; and the expenditure was Rs. 10,400, the principal heads being water-supply and education. The town owes what little importance it possesses to its selection as the head-quarters of a District.

Bulsār Tāluka.—Southern *tāluka* of Surat District, Bombay, lying between 20° 28′ and 20° 46′ N. and 72° 52′ and 73° 8′ E., with an area of 208 square miles. It contains one town, BULSĀR (population, 12,857), the head-quarters; and 95 villages. The population in 1901 was 83,476, compared with 87,889 in 1901. Land revenue and cesses amounted in 1903–4 to nearly 2·8 lakhs. There are no alienated villages in the *tāluka*. The whole surface is irregular, seamed with river-beds, and rising into rocky uplands. Situated on the sea-coast, the climate is considered healthy at all times of the year, but the eastern parts are malarious at certain seasons. Tithal, a village on the coast, is resorted to as a sanitarium by visitors from Bombay. The *tāluka* is abundantly watered by rivers and streams.

Bulsār Town (*Walsād*, *Valsād*).—Port and head-quarters of the *tāluka* of the same name in Surat District, Bombay, situated in 20° 37′ N. and 72° 56′ E., about 40 miles south of Surat and 115 north of Bombay, on the estuary of the navigable though small river Auranga, and on the railway between Surat and Bombay. Population (1901), 12,857. Of the Musalmāns, the greater number are Tais, or converted Hindus, who are engaged chiefly in cloth-weaving, and are, as a rule, well-to-do. The municipality dates from 1855. The income during the decade ending 1901 averaged Rs. 29,000; in 1903–4 it was Rs. 25,000. Bulsār is well placed for trade, both by sea and by land. The total value of its coast trade, exclusive of Government stores, in 1903–4, was 12 lakhs, of which 7½ lakhs represented the value of exports and 4½ lakhs that of imports. The chief imports are piece-goods, tobacco, wheat, fish, and sugar; the chief exports are timber, grain, molasses, oil, firewood, and tiles. The export of timber is the staple of Bulsār trade. The wood brought from the Dāng forests is exported by sea to Dholera, Bhaunagar, and the other ports of Kāthiāwār. There are manufactures of cloth for wearing apparel, silk for

women's robes, and of bricks, tiles, and pottery. The town contains a Sub-Judge's court, a dispensary, and two English schools, of which one is a high school, attended by 101 and 159 pupils. It has also 9 vernacular schools, 6 for boys and 3 for girls, attended respectively by 412 and 219 pupils.

Bumbra-ke-Thul.—The modern name of BRĀHMANĀBĀD, a ruined town in Thar and Pārkar District, Sind, Bombay.

Bundāla.—Village in the District and *tahsīl* of Amritsar, Punjab, situated in 31° 32′ N. and 74° 59′ E., 11 miles south-east of Amritsar city. Population (1901), 4,500. The place is of little commercial importance, and is chiefly noticeable for its famous monastery of Jogīs.

Bundelkhand (British).—A tract of country in the United Provinces, which includes the Districts of JĀLAUN, JHĀNSI, HAMĪRPUR, and BĀNDĀ, with those parts of ALLAHĀBĀD which lie south of the Jumna and Ganges. It thus consists of an area of about 11,600 square miles, lying south-west of the Jumna from its junction with the Chambal. The name is taken from that of the Bundelā Thākurs, the most important clan inhabiting it. The word Bundelā is popularly derived from *būnd*, 'a drop,' in allusion to the attempted sacrifice of himself by the founder of the clan, a Gaharwār. His son was born from the drops of blood which fell on the altar of Vindhyabāsinī Devī at Bindhāchal (*see* MIRZĀPUR CITY). Other derivations are from Vindhya, or from *bāndi*, 'a slave-girl.'

Physical aspects.

The northern range of the Eastern Vindhyas called Bindhāchal cuts across the south of Jhānsi, Bāndā, and Allahābād, with many outlying hills, but nowhere rises above 2,000 feet. The base of the hills rests on gneiss, while the hills themselves are of sandstone, overlaid south of these Provinces by basalt, the Deccan trap, which has also spread north in dikes. From the hills numerous streams flow north or north-east towards the Jumna, of which the most important are the Betwā, Dhasān, Birmā, Ken, Bāghain, Paisuni, and Southern Tons. The geological formation of Southern Bundelkhand has greatly influenced the soil of the alluvial plain lying between the hills and the Jumna. This contains a large proportion of disintegrated trap, which gives it a dark colour; it is especially adapted for growing wheat, and is known as 'black soil,' and in the vernacular as *mār*. A variety of lighter colour and differing qualities is known as *kābar*. From Jhānsi to Lalitpur a soil called *rākar* is found, the prevailing colour of which is largely red or yellow, owing to the presence of iron in the disintegrated gneiss. Another soil of red colour is formed from disintegrated sandstone *in situ*, and though productive is easily exhausted, as it is very shallow. Black soil is retentive of moisture, but requires irrigation in unfavourable seasons, and in dry weather opens out in large cracks.

During the rains unmetalled roads are almost impassable owing to the tenacious mud formed on them. A native proverb says that *kābar* is too wet to plough one morning, and too dry and hard to plough the next day.

In Bāndā, as in other tracts crossed by the Vindhyas, many varieties of stone implements have been found, the relics of prehistoric man[1].

History.

The earliest traditions connected with British Bundelkhand relate that it was ruled over by Gaharwār Rājputs. Nothing certain is known of these; but some of the numerous tanks formed by throwing embankments across the narrow ends of valleys are attributed to them, namely, those where the embankments are formed of uncut stone. The largest is the Bijainagar lake, situated about three miles east of Mahobā. According to tradition the Gaharwārs were followed by Parihārs, who were in turn succeeded by Chandels, a clan which has left many memorials of its rule. Nothing but the name is known of Nānika or Nannuka, described in several inscriptions as the founder of the dynasty; but he probably flourished in the first half of the ninth century A.D. The fourth Rājā, Rāhila (*circa* 890–910), seems to have extended his dominions, and he constructed the Rāhilya Sāgar ('lake') at Mahobā, with a fine temple, now in ruins, on its embankment. The earliest dated inscriptions are those of Dhanga (950–99), who appears to have been the most powerful of the early Chandels. He assisted Jaipāl of Lahore in his unsuccessful invasion of the Ghazni kingdom in 978, and according to his inscriptions was recognized as overlord by the rulers of most of Central, Southern, and Eastern India; but this is clearly an exaggeration. His successor, Ganda (999–1025), who appears as Nanda Rai in the Muhammadan histories, also assisted Jaipāl of Lahore against Mahmūd of Ghazni; and according to Firishta he killed the king of Kanauj in 1021, but surrendered to Mahmūd in 1023, when he was in possession of fourteen forts. Kīrtti Varmma I, the eleventh king (1049–1100), seems to have been reigning when his son, Sallakshana, conquered Karna, king of Chedi or Southern Kosala. He is also the earliest Chandel whose coins, copied from those of the Chedi kings, are known. Tradition assigns to him the construction of the Kīrat Sāgar at Mahobā, and some buildings at Ajaigarh. Madan Varmma, the fifteenth king (1130–65), was a vigorous ruler, who extended the sway of the Chandels. He again subdued the Chedi kingdom, which had become independent, and is said to have conquered Gujarāt. His immediate successor, Paramārdī Deva or Parmāl (1165–1203), is still remembered, as during his reign Prithwī Rāj of Delhi conquered Bundelkhand in 1182, and the Chandel power received a second blow in 1203, when Kutb-ud-dīn

[1] J. Rivett-Carnac, *Journal, Asiatic Society of Bengal*, 1883, p. 221, and J. Cockburn, ibid., 1894, pt. iii, p. 21.

raided the country. Popular tradition holds that Paramārdī lost his kingdom through disobeying the four conditions laid on the founder of the race—not to drink wine, not to put Brāhmans to death, not to form improper marriage connexions, and to preserve the name of Varmma. The Chandel dominion lay between the Dhasān on the west, the sources of the Ken on the south, the Jumna on the north, and the Vindhya Hills on the east. At times it extended as far west as the Betwā. Kālinjar, Khajrāho, Mahobā, and Ajaigarh were its great fortresses. In inscriptions the country is sometimes called Jejākabhukti, which has been contracted into Jijhoti, from which the Jijhotia Brāhmans, who still inhabit the tract, take their name. The kingdom of Chi-ki-to, described by Hiuen Tsiang in the seventh century as lying north-east of Ujjain, has been identified with Jejāka.

After the Musalmān conquest the Chandels became petty Rājās. The country was held for a short time by Mewātīs, probably in the first half of the thirteenth century, and then by Bhars. Tradition shows the latter as owning a large part of the Eastern Doāb and Central Oudh, and the Persian historians record the conquest by Ulugh Khān, in 1248, of a king Dalakī-wa-Malakī, reigning from Karā to Kālinjar. The name appears to be a compound of two names, Dal and Bal, which are known from tradition. The Bhars are locally said to have been driven out by a Muhammadan, and replaced by the Khangārs, formerly servants of the Chandels.

The Bundelās.

The Bundelās claim to be descended from Pancham, a Gaharwār who attempted to sacrifice himself, as noted above; but their real origin is obscure. They probably began to acquire power in the fourteenth century, first settling at a place called Mau, which has not been definitely identified, and then taking Kālinjar and Kālpī; but some writers place them a century earlier. As their power increased, chiefly in western Bundelkhand (Central India), the Bundelās constantly came into collision with the Muhammadans. About 1507 Rudra Pratāp became chief, and is said to have been formally appointed governor by Bābar. From his sons most of the great Bundelā families derive their descent. In 1545 Sher Shāh, Sūr, invaded Bundelkhand, and lost his life while besieging Kālinjar. Kīrat Singh, the last Chandel Rājā, was put to death by Islām Shāh, who took the fort; but it again fell into the hands of the Bundelās, till in 1569 Akbar got possession of it. The Bundelās, who were now divided, still held considerable power and were often successful in resisting the imperial troops. Bīr Singh Deo, who ruled at Orchhā, and commenced the fort at Jhānsi, incurred the special anger of Akbar by planning the murder of Abul Fazl at the instigation of prince Salīm, afterwards the emperor Jahāngīr; and though he remained in favour during the reign of the latter, he rebelled

against Shāh Jahān, and his territory was confiscated. The central part of Bundelkhand was ruled by Champat Rai from Mahobā. He joined in Bīr Singh Deo's revolt, and, though attacked by forces from Agra, from Allahābād, and from the Deccan, maintained a guerrilla warfare near the Betwā. He finally accepted service under the emperor and obtained the *pargana* of Kūnch in Jālaun, and, in return for assistance given to Aurangzeb at the battle of Sāmogarh, received further grants, but lost favour and was assassinated by his wife's relations. Champat Rai's son, Chhatarsāl, soon became chief leader of the Bundelās, and in a few years held the whole of western Bundelkhand, and gradually extended his power, taking Kālinjar and most of what is now British Bundelkhand. He defeated the imperial troops again and again, and in 1707, on the accession of Shāh Alam Bahādur, was confirmed in all the acquisitions he had made. In 1723 Muhammad Khān Bangash of Farrukhābād, while governor of Mālwā, was ordered to bring the Bundelās to order; and in 1727, after his transfer to Allahābād, he attacked them again, laying waste the whole country. Unable to resist the invasion, Chhatarsāl called in the Marāthās in 1729, and Muhammad Khān barely escaped with his life, glad to promise never to enter Bundelkhand again. When Chhatarsāl died, about 1734, he bequeathed one-third of his territory (Jhānsi and Jālaun) to the Marāthās, and the rest was divided among his heirs. Bundelkhand was valuable to the Marāthās, as it lay on the road from the Deccan to the Doāb, and the Peshwā Bājī Rao made constant use of it, the Bundelās binding themselves by treaty to co-operate with him. In 1747 the Peshwā further extended his possessions in this region by a fresh treaty, and nearly twenty years later troops from here assisted Shujā-ud-daula of Oudh in his unsuccessful struggle with the British. British troops first entered Bundelkhand in 1776, when war broke out with the Marāthās after the Treaty of Purandhar, but they passed through without retaining any hold on the country. The Bundelās then succeeded in freeing themselves to some extent from the Marāthā power. A Gosain or religious mendicant named Himmat Bahādur, who had already commanded troops, now began to rise into power; and he combined with Alī Bahādur, an illegitimate grandson of Bājī Rao, who was in command at Gwalior, to crush the Bundelā chiefs. A long struggle took place between 1790 and 1802, when Alī Bahādur died while attempting to take Kālinjar. By the Treaty of Bassein in 1802 the Peshwā ceded territory to the British, some of which was afterwards exchanged for part of the Marāthā possessions in Bundelkhand. Another portion of these possessions was acquired under a later treaty. The subordinate Marāthā chiefs, however, refused to recognize these treaties; and Shamsher Bahādur, son of Alī Bahādur, proceeded to lay waste Bundelkhand and the

British Districts of Mirzāpur and Benares. Himmat Bahādur then abandoned the Marāthās and came over to the British, who granted him a large tract along the Jumna between Allahābād and Kālpī. British troops co-operated with Himmat Bahādur and drove Shamsher Bahādur across the Betwā, and in 1803 took Kālpī. Shamsher Bahādur became titular Nawāb of Bāndā with a pension of four lakhs, and by the end of 1804 the country was fairly quiet. The fort of Kālinjar was captured in 1812. Subsequent additions to British territories took place by lapse, and Jhānsi city was finally acquired from Sindhia in exchange for Gwalior fort and Morār in 1886.

Population.

The population of British Bundelkhand fell from 2,693,000 in 1891 to 2,456,000 in 1901, a decrease of nearly 9 per cent. Excessive rainfall and cloudy weather in the early years of the decade brought on rust, which damaged the spring crops and caused great loss to the people. The failure of the rains in 1895 and 1896 resulted in severe famine, and a virulent cholera epidemic broke out. The density is only 212 persons per square mile, being less than one-half the density in the United Provinces generally. Of the total population, 2,297,000, or more than 93 per cent., are Hindus, and only 143,000, or less than 6 per cent., are Muhammadans, who form 14 per cent. of the population in the United Provinces as a whole. British Bundelkhand extends to the jungles of Central India, and its inhabitants have a strong infusion of Dravidian blood. The principal jungle tribes are the Kols, Khangārs, and Sahariās, who have become nominally Hinduized. The change is, however, more noticeable in regard to social customs, such as marriage rules, than in religious beliefs, which continue strongly animistic. A few estates are still owned by Marāthās, but the effects of their rule have almost disappeared. In Bāndā and Allahābād the Baghelī and Awadhī dialects of Eastern Hindī are spoken, while in Hamīrpur, Jhānsi, and Jālaun the vernacular is the Bundelī dialect of Western Hindī.

Agriculture.

While in the United Provinces, as a whole, the autumn crops cover an area only about 16 per cent. greater than the spring crops, in Bundelkhand they are nearly double. About one-third of the autumn crop is *jowār* and one-seventh cotton, and from 50 to 80 per cent. of the spring crop is gram. These proportions vary according to the seasons, and after good rain the *rabi* area is largely increased. Irrigation from wells is difficult owing to the low spring-level, and the storage tanks made by closing valleys do not command large areas. There is only one canal, drawn from the Betwā, a protective work which chiefly serves Jālaun. In 1903-4, only about 4 per cent. of the cultivated area was irrigated, compared with one-third for the United Provinces as a whole. Bundelkhand is thus peculiarly

liable to suffer from deficient rainfall. A canal from the Ken to serve Bāndā District has recently been completed; and schemes to increase the water available in the Betwā Canal, which is at present insufficient or the demand, and to open other sources are under consideration. Other calamities are the prevalence of rust after a wet or cloudy winter, and the growth of a weed or grass called *kāns*, which spreads rapidly and can be eradicated only with difficulty. Famine has thus been severely felt again and again; and the failure of the rains in 1896, which followed successive bad years, was especially disastrous.

The liability to good and bad cycles of agricultural conditions is coupled with peculiarities in the nature and disposition of the people. Though perhaps not more extravagant than the inhabitants of the rest of the United Provinces, they are distinctly less provident; and the careful cultivation and saving habits of the Jāts, Kurmīs, Kāchhīs, Muraos, and Koirīs of other Districts are not found in Bundelkhand. This may be traced partly to the liability to vicissitudes already referred to, and partly to the effects of the revenue system of the Marāthās, who possessed the tract before the British. The most common method was to assess a village annually at fixed rates on soil or crops, and to make deductions for bad seasons, after a valuation of the crops of each holding. This was a system of rack-renting, as the rates were the highest which could be paid in a good season, and it is obviously not a system under which either the standard of comfort or the prosperity of a community would be likely to increase. Except in part of the Lalitpur *tahsīl* of Jhānsi, the land was chiefly held by individual cultivators, and *talukdārs* or large holders of land were few. British rule conferred proprietary rights on the village headmen who were found managing land and collecting rents, and on a few relations of these who shared in the headman's special holding or reduced rent. Instead of the demand being regulated by the season, a rigid system of collecting a fixed amount was introduced; land became a transferable security, and the owners, unaccustomed to their new conditions, got freely into debt, and lost their holdings. It was estimated that in Bāndā, most of which became British territory early in the nineteenth century, an aggregate equal to twice or thrice the area of the District changed hands during the next forty years. Most of Jhānsi District was acquired later, when more experience had been gained in revenue administration, and sale of land was not allowed till 1862; but even here sufficient allowances were not made. Some landowners had been in debt since the Marāthā rule. After the Mutiny, revenue was collected from many from whom it had already been extorted by the Orchhā or Jhānsi rebels. In 1867 the crops failed, and in 1868–9 there was famine and great loss of cattle. In 1872 many cattle were lost from murrain. Although the settlement had appeared light, it became necessary to re-examine the

condition of the District in 1876. After much discussion the Jhānsi Encumbered Estates Act (XVI of 1882) was passed, and a Special Judge was empowered to examine claims and reduce excessive interest. The sale of a whole estate operated as a discharge in bankruptcy to extinguish all debts due. Many estates were cleared by the sale of a portion only. A striking feature of the proceedings was the rapid increase in the value of land.

The experiment, though apparently successful, had no lasting effect. Bundelkhand suffered from another series of bad years, commencing with rust and blight in 1892–3, excessive rain in 1894, and drought in 1895 and 1896. Even in Bāndā, where the last settlement was made, not on actual 'assets,' but on a fair average area of cultivation, the population decreased by 10½ per cent. between 1891 and 1901. Debt had become serious in all parts of the tract. The Jhānsi legislation has therefore been revived, with modifications suggested by the experience gained, in (United Provinces) Act I of 1903, which has been applied to the whole of British Bundelkhand. In addition to this, two new safeguards have been adopted. By (United Provinces) Act II of 1903 permanent alienations of land are forbidden where the alienor is a member of one of certain agricultural tribes, unless in favour of another member of the same tribe, or where both parties reside in the same District and are both members of agricultural tribes. Except where permanent alienation is allowed, mortgages and leases are subject to the condition that possession of the land involved cannot be transferred for more than twenty years. Sales in execution of decrees passed by civil or revenue courts (other than those of the Special Judges who have been appointed) are forbidden, but such decrees may be liquidated by usufructuary mortgages for terms not exceeding twenty years. Large reductions of revenue have been made, and the assessment of all parts of Bundelkhand is being revised. The new demand, instead of being fixed for thirty years, will be liable to further revision whenever the cultivated area fluctuates considerably.

[V. A. Smith, 'History of Bundelkhand,' *Journal, Asiatic Society of Bengal* (1881), p. 1; A. Cunningham, *Archaeological Survey Reports*, vols. vii and xxi; C. A. Silberrad, *Journal, Asiatic Society of Bengal* (1902), p. 99; E. G. Jenkinson, *Settlement Report of Jhānsi* (1871); A. Cadell, *Settlement Report of Bāndā* (1881).]

Bundelkhand Agency.—A collection of Native States in the Central India Agency, under a Political Agent, lying between 23° 49′ and 26° 18′ N. and 78° 11′ and 81° 3′ E., with an area of about 9,852 square miles. It is bounded on the north by the Jālaun, Hamīrpur, and Bāndā Districts of the United Provinces; on the south by the Saugor and Damoh Districts of the Central Provinces; on the east by the Baghelkhand Agency; and on the west by the Jhānsi District of

the United Provinces and by part of Gwalior. Of the total area, about 8,000 square miles lie in the level country to the west of the Pannā range, while the remainder falls in the rugged tract formed by that branch of the Vindhyas. Except in the small portion lying north of Datiā, the principal rock up to the Pannā range is gneiss. In the area north of Datiā and surrounding Samthar, however, this formation is covered with alluvium. In the Pannā range sandstones and other rocks of the Vindhyan series are well represented. The mineral riches of this tract may be considerable, but have as yet been imperfectly examined. The soil is generally of much lower fertility than in Mālwā, being mainly of the lighter classes known as *kābar* and *rānkar*.

The population in 1901 was 1,308,316, giving a density of 133 persons per square mile. Hindus numbered 1,225,740, or 94 per cent.; Musalmāns, 46,356; Animists (chiefly Gonds), 22,952; Jains, 12,207; and Christians, 608. The Agency contains 4,244 villages and 10 towns, of which 7 are the capitals of States, the remaining 3 being NOWGONG cantonment (11,507), SEONDHA (5,542), and NADIGAON (4,443).

For the early history of this tract see BRITISH BUNDELKHAND. The political charge was created in 1802 after the Treaty of Bassein, a Political officer being attached to the forces operating in Bundelkhand for the purpose of introducing order into the civil administration. In 1811, when the country was settled, an Agent to the Governor-General for Bundelkhand was appointed, with head-quarters at Bāndā. In 1818 the head-quarters were moved to Kālpī, in 1824 to Hamīrpur, and in 1832 back to Bāndā. In 1835 the control passed to the newly appointed Lieutenant-Governor of the North-Western Provinces, whose head-quarters were at Agra. In 1849 the superior control was handed over to the Commissioner for the Saugor and Nerbudda Territories, a Political Assistant at Jhānsi holding immediate charge under his orders. The Assistant was soon after moved to NOWGONG, which is still the head-quarters, the superior control being transferred to the Resident at Gwalior, who at this time held an independent charge directly under the Supreme Government. In 1854, on the creation of the CENTRAL INDIA AGENCY, the control passed to the Agent to the Governor-General for Central India. From 1862 to 1871 the Baghelkhand charge was held conjointly with that of Bundelkhand, the Political Assistant being replaced in 1865 by a Political Agent. In 1888 KHANIĀDHĀNĀ was made over to the Resident at Gwalior, and in 1896 the CHAUBE JĀGĪRS with Baraundā and with Jaso were transferred to Baghelkhand. There are now 9 States, 13 estates, and the isolated *pargana* of ALAMPUR belonging to the Indore State in the Bundelkhand Agency. Of these, only 3 are held under treaties: namely, ORCHHĀ, DATIĀ, and SAMTHAR. The remainder are *sanad* holdings: namely, PANNĀ, CHARKHĀRĪ, AJAIGARH, BIJĀWAR, BAONĪ, CHHATARPUR,

SARĪLĀ, DHURWAI, BIJNA, TORI-FATEHPUR, BĀNKĀ-PAHĀRĪ, JIGNĪ, LUGĀSI, BĪHAT, BERĪ, ALĪPURA, GAURIHĀR, GARRAULI, and NAIGAWĀN REBAI. The *jāgīr* of Bilheri, subordinate to the Chhatarpur State, is held under British guarantee. The chiefs of the treaty States exercise full powers. The *sanad* States were created on British assumption of the paramount power, after the Treaty of Bassein. The minor States were, during the early years of the nineteenth century, tributary to Alī Bahādur of Bāndā, a grandson of the Peshwā. The policy of the British Government was to confirm these chiefs in possession of such territory as they held under Alī Bahādur, subject to conditions of allegiance and fidelity, the renunciation of all views of future aggrandizement, and the abandonment of all lands acquired subsequent to the death of Alī Bahādur. In return for compliance with these conditions, the chiefs received *sanads* or deeds confirming them in possession of their States. The conditions vary slightly in the case of different grants; but in all cases they bind the chief to submission and loyalty, and require him to govern well, to deliver up criminal refugees, and to seize thieves and robbers and surrender them to the British authorities. The rulers are at the same time liable to such control, not inconsistent with their engagements, as the British Government may see fit to exercise; their rights and powers are limited to such as have been expressly conferred, while the exercise of judicial powers is subject to such restrictions as may be laid down by the Government of India. In practice the chiefs of the senior *sanad* States—Pannā, Charkhārī, Ajaigarh, Bijāwar, Baonī, and Chhatarpur—are usually invested with full criminal powers, subject to a reference in cases in which the sentences involve death, transportation, or imprisonment for life. The minor chiefs are ordinarily permitted to exercise powers up to those of a magistrate of the first class in British India, according to their capability and experience. The Political Agent has the right to reserve for trial by himself all serious cases and such other cases as he may consider it advisable to deal with personally. Those chiefs who have not been specially empowered are required to refer to the Political officer all cases of heinous crime. In 1862 *sanads* of adoption were granted to all the chiefs, guaranteeing them the privilege of adopting heirs in case of failure of issue, such adoption being conditional on the payment of certain succession dues (*nazarāna*), which vary in individual cases, but ordinarily entail a payment as relief of a quarter of a year's net revenue on each direct succession, and half a year's net revenue in cases of adoption.

The Jhānsi-Mānikpur section of the Great Indian Peninsula Railway passes along the north of the Agency, which is intersected by two high roads. One of these strikes north-west and south-east from Jhānsi, connecting Gwalior, Datiā, Nowgong, Chhatarpur, and Satnā;

the other leads from Bāndā (in the United Provinces) through Mahobā to Chhatarpur, and to Saugor in the Central Provinces.

The Political Agent exercises the powers of a District Magistrate and a Court of Sessions within the limits of his charge, where such powers are not exercised by the chiefs. He is District and Sessions Judge for those portions of the Jhānsi-Mānikpur and Jhānsi-Bhopāl sections of the Great Indian Peninsula Railway which pass through the Orchhā State and the Alīpura and Garrauli *jāgīrs*, and also exercises the powers of an Appellate and Sessions Court for Nowgong cantonment.

The Agency contains the States, portions of States, and petty States shown in the following table:—

Name.	Title.	Caste or clan.	Area in square miles.	Population (1901).	Total revenue.
					Rs.
Orchhā	H. H. Mahārājā	Bundelā Rājput.	2,080	321,634	7,00,000
Datiā	H. H. Mahārājā	Bundelā Rājput.	911	173,759	4,00,000
Samthar	H. H. Rājā (*Mahārājā*)	Gūjar	178	33,472	1,50,000
Pannā	H. H. Mahārājā	Bundelā Rājput.	2,492	192,986	5,00,000
Charkhārī	H. H. Mahārājā	Bundelā Rājput.	745	123,954	6,00,000
Ajaigarh	H. H. Mahārājā	Bundelā Rājput.	771	78,236	2,25,000
Bijāwar	H. H. Mahārājā	Bundelā Rājput.	973	110,500	2,25,000
Baonī	H. H. Nawāb	Muhammadan Pathān	122	19,780	1,00,000
Chhatarpur	H. H. Rājā (*Mahārājā*)	Bundelā Ponwār	1,118	156,139	3,50,000
Sarīlā	Rājā	Bundelā Rājput.	33	6,298	59,147
Dhurwai	Dīwān	Bundelā Rājput.	18	1,826	8,000
Bijna	Dīwān	Bundelā Rājput.	27	1,578	10,000
Tori-Fatehpur	Dīwān	Bundelā Rājput.	36	7,099	24,000
Bānkā-Pahārī	Dīwān	Bundelā Rājput.	4	1,056	4,000
Jignī	Rao	Bundelā Rājput.	22	3,838	13,000
Lugāsi	Dīwān	Bundelā Rājput.	47	6,285	20,000
Bīhat	Rao	Bundelā Rājput.	16	3,984	13,000
Berī	Rao	Bundelā Ponwār	32	4,279	21,000
Alīpura	Rao (*Rājā*)	Parihār Rājput	73	14,592	30,000
Gaurihār	Jāgīrdār (*Rao Bahādur*)	Jijhotia Brāhman	73	7,760	27,000
Garrauli	Dīwān	Bundelā Rājput.	37	5,231	25,000
Naigawān Rebai	Jāgīrdār	Daowa Ahīr	7	2,497	10,880
Bilheri (Guaranteed)	Muāfīdār	Jijhotia Brāhman	Included in Chhatarpur.	3,073	7,000
Alampur (Indore)	... ...	... ...	37	16,711	58,000
Railways and cantonments	... ...	... ...	...	11,749	...
		Total	9,852	1,308,316	35,80,027

NOTE.—Titles given in italics are personal.

Bunder.—*Tāluk* of Kistna District, Madras. *See* BANDAR.

Būndi State.—Native State in the south-east of Rājputāna, lying between 25° and 26° N. and 75° 15′ and 76° 19′ E., with an area of

2,220 square miles. It is bounded on the north by Jaipur and Tonk; on the west by Udaipur; and on the south and east by Kotah. The territory may be roughly described as an irregular rhombus, traversed throughout its whole length from south-west to north-east by a double line of hills, constituting the central Būndi range, which divides the country into two almost equal portions. For many miles the precipitous scarp on the southern face of this range forms an almost impassable barrier between the plain country on either side. There are four passes: namely, one at the town of Būndi, through which runs the road from Deoli to Kotah; another a little farther to the east near Jainwās, through which the direct road to Tonk passes; a third between Rāmgarh and Khatgarh, where the Mej river has cut a channel for itself; and the fourth near Lākheri in the north-east. The highest peak of the range (1,793 feet above the sea) is at Sātur, 10 miles west of Būndi town. The Chambal, though it never enters Būndi territory, forms for very nearly the whole distance the southern and eastern boundaries of the State; it varies in breadth from 200 to 400 yards, and in places, notably at Keshorai Pātan, where it is crossed by a ferry, attains considerable depth. Its principal tributary from the Būndi side is the Mej. The latter, rising in Mewār at an elevation of about 1,700 feet above sea-level, flows almost due north for 13 miles, till it enters Būndi territory near the village of Negarh. Thence it proceeds in a north-easterly direction a little beyond Dablāna, where it inclines almost due east for about 16 miles; and then, turning abruptly south, it cuts its way through the central range, and emerging near Khatgarh, bends with a long and tortuous sweep again to the east, and continuing more or less parallel with the range, falls into the Chambal in the north-east corner of the State. In this way the Mej drains both the northern and southern portions of the State; its chief tributary in the former is the Bajaen and in the latter the Kural.

Physical aspects.

The western portion of Būndi is occupied by schists belonging to the Arāvalli system, among which are a few outliers of quartzite belonging to the Delhi system. At the capital, sandstones of Upper Vindhyan age are faulted down against the Arāvalli schists, and a few outliers of the same sandstones are found resting upon the schists in the northern side of the fault. Traces of copper have been found near Datūnda; and iron was formerly worked to a small extent near Bhaironpura, 7 miles north-east of the capital, and also in the north-west corner of the State at Pagāra.

The Būndi jungles were in old days famous for their big game. Tod tells us that Mahārao Rājā Bishan Singh, who died in 1821, 'had slain upwards of 100 lions with his own hand, besides many tigers; and boars innumerable had been victims to his lance.' There are now no

lions in the State, but tigers and black bears are still found in parts, while leopards are numerous. *Sāmbar* (*Cervus unicolor*) and *chītal* (*C. axis*) died in large numbers during the drought of 1899–1900, but are now again on the increase.

The climate is but moderately healthy; fevers and rheumatism prevail to a considerable extent. Statistics of rainfall are available only since 1890 and for the capital. The annual rainfall averages about 20 inches, and has varied from nearly 42 inches in 1900 to 13 inches in 1890.

History.

The chief of Būndi is the head of the Hāra sept of the great clan of Chauhān Rājputs, and the country occupied by this sept has for the last five or six centuries been known as Hāraoti. The Chauhāns came from Northern India to Sāmbhar, a town now held jointly by the chiefs of Jaipur and Jodhpur, about the beginning of the eighth century, and after ruling there and at Ajmer, gained the kingdom of Delhi. The last Hindu king of Delhi was the famous Prithwī Rāj Chauhān, who was killed in 1192 in a battle with Muhammad Ghorī. While, however, the Chauhāns were still ruling at Sāmbhar towards the end of the tenth century, one Lachhman Rāj or Lākhan, the younger son of Wākpati Rāj, alias Mānik Rai I, set out to found a kingdom for himself and proceeded south-west to NĀDOL. Here his descendants ruled for about 200 years, when Mānik Rai II migrated with some of the clan and settled down in the south-east corner of Mewār at or near Būmbaoda, Menāl, &c. The sixth in descent from Mānik Rai II was Rao Hado or Hār Rāj, from whom the sept take the name of Hāra. This account differs from that given by the Būndi bards, and by Colonel Tod in his *Rajasthan*, but is based on inscriptions found at Nādol, Achalgarh, and Menāl. The local authorities say the name 'Hāra' was assumed in consequence of a miracle performed in the fifth century by Asapura Devī, the guardian goddess of the Chauhāns, over the bones (*hada*) of Bhanurāj, the son of the Rājā of Hānsi, who had been devoured by some demon. According to Tod, the date was about 1022 and the demon was no less a person than Mahmūd of Ghazni, who killed and dismembered the Chauhān chief, but the latter was restored to life by the goddess. About 1342 Rao Dewa or Deorāj, the second chief after Hār Rāj, took the town now called Būndi from the Mīnās, and made them acknowledge him as their lord. He may be considered the founder of the State, and since his time there have been twenty-one chiefs of Būndi.

Constant feuds and battles with Mewār took place in the fifteenth century, but the most dangerous enemy of the Hāras was the powerful Muhammadan dynasty of Mālwā. An army sent by the Sultān of Māndu besieged and took Būndi about 1457, Rao Bairi Sāl and many of his nobles falling in its defence. The Rao's youngest son, Shām

Singh, was carried off by the invaders, and brought up as a Musalmān under the name of Samarkand. Shortly afterwards the Hāras commenced plundering the territories of Māndu, and another army was sent against them under the command of Samarkand, who took Būndi and ruled there for some years, till he was killed by Rao Nārāyan Dās. The next chief of note was Rao Sūrjan, with whose accession in 1554 commenced a new era for the Būndi State. During the preceding 200 years the Hāra chiefs had, while possessing a certain amount of independence, been to a considerable extent vassals of the Rānās of Udaipur. Their services had been requisitioned by the latter in times of emergency, and had been given as much on account of the relationship engendered by marriages between the two houses as from any feeling of dependence. Rao Sūrjan had, possibly as governor on behalf of the Rānā, obtained possession of the famous fortress of RANTHAMBHOR, which was much coveted by Akbar. According to Musalmān historians, the emperor besieged it in person and took it in a month; but the Hindu version is that the siege was ineffectual, and that Akbar obtained by stratagem and courtesy what he had failed to secure by force of arms. In any case the fort passed into the possession of the emperor, and the Būndi chief is said to have received as a reward the government of fifty-two districts including Benares, and the command of 2,000. By this transaction the Būndi State threw in its lot with the Muhammadan emperors, and from this period (1569) the Hāra chief bore the title of Rao Rājā. Several of Sūrjan's successors took service with the emperors of Delhi, obtained high rank, and received large grants of land, which were alternately resumed and restored as they lost or gained favour, or took the wrong or right side in the struggle for empire.

In the beginning of the seventeenth century occurred the partition of Hāraoti and the formation of KOTAH as a separate State. Rao Rājā Ratan Singh, chief of Būndi, had given in *jāgīr* to his son, Mādho Singh, the town of Kotah and its dependencies. They joined the imperial army at Burhānpur when Jahāngīr's son, Khurram, was threatening rebellion against his father; and for services then rendered, Ratan Singh obtained the government of Burhānpur, and Mādho Singh received Kotah and its dependencies, to be held by him and his heirs direct from the crown. After Ratan Singh came Rao Rājā Chhatarsāl, who was one of the most gallant chiefs of Būndi. He took part in many battles in the Deccan (such as Daulatābād, Bīdar, Gulbarga, &c.), and was finally killed leading the vanguard of the army of Dārā against Aurangzeb in 1658. The new emperor naturally transferred all the resentment he harboured against Chhatarsāl to his son and successor Bhao Singh, but after vainly attempting to ruin him, decided to use him, and gave him the government of Aurangābād. In 1707, in the

battle for Aurangzeb's vacant throne, Būdh Singh, chief of Būndi, held a prominent post, and by his conduct and courage contributed largely to the victory which left Shāh Alam Bahādur Shāh without a rival. For these services Būdh Singh was made a Mahārao Rājā, a title borne by his successors to this day. Shortly afterwards occurred a bitter feud with Jaipur, and Būdh Singh was driven out of his country and died in exile. His son, Umed Singh, after many gallant efforts, succeeded, with the assistance of Malhār Rao Holkar, in recovering his patrimony in 1748; but he had to make over to the Marāthās, as payment for their services, the town and district of Pātan. In 1770 Umed Singh abdicated in favour of his son, Ajīt Singh, who, three years later, killed Rānā Ari Singh of Udaipur when out shooting with him. Centuries before, a dying *satī* is said to have prophesied that 'the Rao and the Rānā should never meet at the *ahaira* or spring hunt without death ensuing,' and the prophecy has indeed proved true; for in 1531 Rao Sūraj Mal and Rānā Ratan Singh were shooting together in the Būndi jungles and killed each other, while in 1773, as above stated, Ajīt Singh of Būndi killed Rānā Ari Singh. In consequence of these unfortunate incidents there is a feud between the two houses, which is not yet forgotten. Ajīt lived for only a few months after the event last mentioned, and was succeeded by his son, Bishan Singh, who gave most efficient assistance to Colonel Monson in his disastrous retreat before the army of Holkar in 1804, thereby bringing on himself the special vengeance of the Marāthā leader. From that time up to 1817 the Marāthās and Pindāris constantly ravaged the State, exacting tribute and assuming supremacy.

On February 10, 1818, a treaty was concluded with Bishan Singh by which the State of Būndi was taken under British protection. The tribute formerly paid to Holkar was remitted, and the lands held by that chief in Būndi were also restored to Bishan Singh, who further agreed to pay to the British Government the tribute he had been paying to Sindhia. This was fixed at Rs. 80,000 a year, of which one-half was on account of Sindhia's share (two-thirds) of the revenue of the Pātan district, which Government intended to restore to Būndi, under the belief that it had been usurped by Sindhia. When, however, it was found that Sindhia had not usurped this portion of the Pātan district, but had received it from the Peshwā, to whom it had been ceded by Būndi for assistance rendered in expelling a usurper, the tribute payable by Būndi was reduced to Rs. 40,000 a year. So it remained till 1847, when, with the consent of Sindhia, his share of the Pātan district was made over in perpetuity to the Būndi chief on payment of a further sum of Rs. 80,000 a year to be credited to Gwalior. Under the treaty of 1860 with Sindhia, the sovereignty of the tract in question was transferred to the British Government, from whom Būndi now holds it as

a perpetual fief, subject to a payment of Rs. 80,000 a year, in addition to the tribute of Rs. 40,000 payable under the treaty of 1818.

Bishan Singh died in 1821 and was succeeded by his son Rām Singh, then ten years of age. The murder of his minister, Kishan Rām, in 1830 by an armed party from Jodhpur would have probably caused hostilities between the two States but for the intervention of the British Government. Mahārao Rājā Rām Singh's attitude towards the British Government during the Mutiny of 1857 was one of apathy and lukewarmness, which in the case of the rising of the State troops at Kotah amounted almost to an open support of the rebels' cause, due in some measure to the fact that the chief was not on good terms with the Mahārao of Kotah. He, however, received in 1862 the usual *sanad* conferring on him the right of adoption, was created a G.C.S.I. and a Counsellor of the Empire in 1877, and a C.I.E. in 1878. His rule was old-fashioned but popular, and was remarkable for the strict integrity he evinced in all his actions. He himself was described as the most conservative prince in conservative Rājputāna, and a grand specimen of a true Rājput gentleman. He died full of years and honours in 1889, having ruled for nearly sixty-eight years, and was succeeded by his son, Raghubīr Singh, the present Mahārao Rājā, who was invested with full governing powers in 1890. The only recent event of importance has been the great famine of 1899–1900. The administration is conducted largely on the same old-fashioned lines. His Highness was made a K.C.S.I. in 1897 and a G.C.I.E. in 1901, and is entitled to a salute of 17 guns; he has no surviving sons, and his nearest relation is his brother.

Population.

The number of towns and villages in the State is 819, and the population at each of the three enumerations was: (1881) 254,701, (1891) 295,675, and (1901) 171,227. The decrease of 42 per cent. during the last decade was due to the great famine of 1899–1900, and to the outbreak of a severe type of fever which followed it. The State is divided into twelve *tahsīls* and contains two towns, BŪNDI and NAENWA. The table on the next page gives the chief statistics of population in 1901.

In 1901 Hindus numbered 156,359, or over 91 per cent. of the total; Musalmāns, 8,377, or nearly 5 per cent.; and Jains, 6,482, or nearly 4 per cent. The language mainly spoken is known as Hāraotī, a form of Jaipurī, which is one of the four main groups of Rājasthānī.

The most numerous caste in the State is that of the Mīnās, numbering 22,000, or about 13 per cent. of the total. They once possessed a good deal of this territory, and were noted as daring and expert plunderers, dacoity being their profession and their pastime; they have now settled down and become very fair agriculturists and soldiers. A wild tract of country in the vicinity of the cantonment of Deoli is

called the Mīnā Kherār; it consists of several villages belonging to the Būndi, Jaipur, and Mewār States, which are inhabited by Parihār Mīnās, or Mīnās who claim descent from the Parihār Rājputs who used to rule at Mandor in Jodhpur. Owing to the civilizing influence of the Deoli Irregular Force, now the 42nd (Deoli) regiment, the Mīnā Kherār is at the present time as peaceable as it was formerly turbulent. After the Mīnās come the Gūjars (18,000), who are cattle-dealers and breeders and agriculturists; the Brāhmans (17,000), the Mālis or gardeners (13,000), the Mahājans or bankers and traders (11,400), and the Chamārs or workers in leather (10,700). Taking the population as a whole, more than 53 per cent. live solely by the land, and many more are partially agriculturists.

Subdivision.	Number of		Population.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
	Towns.	Villages.			
Būndi town	1	...	19,313	−14·3	1,295
Arila *tahsīl*	...	33	7,978	−30·8	106
Arnetha *tahsīl*	...	17	5,886	−16·1	48
Barūndhan *tahsīl*	...	115	15,226	−49·1	243
Deyi *tahsīl*	...	90	15,415	−44·3	231
Gothra *tahsīl*	...	99	18,486	−52·7	549
Gaindoli *tahsīl*	...	92	18,698	−30·0	190
Hindoli *tahsīl*	...	119	18,521	−59·5	650
Karwar *tahsīl*	...	53	12,457	−34·7	216
Lākheri *tahsīl*	...	44	9,136	−38·5	101
Naenwa town	1	...	4,501	−26·1	201
Pātan *tahsīl*	...	34	13,247	−18·1	189
Selor *tahsīl*	...	90	9,298	−59·7	84
Talwās *tahsīl*	...	31	3,065	−48·7	104
State total	2	817	171,227	−42·1	4,207

Agriculture.

In the northern half of the State the soil is for the most part hard and stony, and dependent on the rainfall for moisture; generally speaking, the only harvest here is the *kharīf*, sown when the rains fall, and gathered about October. The southern half of Būndi is, on the other hand, rich in alluvial soils; the south-eastern *tahsīls* are covered almost entirely with a rich black cotton soil, capable of producing almost any crop, while in other parts the soil is a light sandy loam rendered fertile by means of numerous wells.

The principal rains crops are maize, *jowār*, and *mūng*; while in the cold season wheat, barley, gram, opium, linseed, &c., are grown. The area ordinarily cultivated is estimated at about 420 square miles, of which 178 are under wheat, 32 under cotton, and 20 under poppy.

Cattle, ponies, sheep, goats, and camels are all bred in considerable numbers. Pasturage is abundant in ordinary years.

The area irrigated is about 70 square miles, almost entirely from wells, of which there are about 10,000. Leathern buckets drawn up with a rope and pulley by bullocks moving down an inclined plane are universally used for lifting the water. The only irrigation tanks are those at Hindoli and Dugāri, which are said to irrigate 240 and 600 acres respectively.

Large tracts of Būndi are woodland, and the total forest area is returned as about 890 square miles. The commonest trees are the *khair* (*Acacia Catechu*), *khejra* (*Prosopis spicigera*), *babūl* (*Acacia arabica*), *dhāk* (*Butea frondosa*), *mahuā* (*Bassia latifolia*), *gūlar* (*Ficus glomerata*), *sāl* (*Shorea robusta*), *goiya* (*Trema orientalis*), *nīm* (*Melia Azadirachta*), *pīpal* (*Ficus religiosa*), *bar* (*Ficus bengalensis*), *aonla* (*Phyllanthus Emblica*), tamarind, and *tendū* (*Diospyros tomentosa*). The forests are not systematically worked, but are fairly protected. The net forest revenue is about Rs. 4,000.

The iron mines in the north-west corner were at one time extensively worked, but are now deserted. Limestone admirably adapted for building purposes is found in several parts.

Trade and communications.

The manufactures are unimportant. There is a cotton-press belonging to the State at Baori, 10 miles from Deoli, in which on an average about 44,000 maunds of cotton are pressed yearly at a profit to the Darbār of about Rs. 21,000. In the working season 60 hands are employed.

The chief exports are cotton, oilseeds, spices, opium, hides, gum, wool, and *ghī*; while the chief imports include piece-goods, sugar, rice, salt, and metals.

There is no railway in the State, the nearest stations being Nasīrābād on the Rājputāna-Mālwā line, 87 miles north-west of Būndi town, and Bāran on the Indian Midland Railway, 65 miles to the south-east. The Nāgda-Muttra line, now under construction, will, however, traverse the eastern portion of the territory, while the proposed Bāran-Ajmer-Mārwār Railway, the earthwork of which was practically completed during the famine of 1899–1900, is to run close to the capital. The total length of metalled roads is nearly 47 miles, and of unmetalled roads $9\frac{3}{4}$ miles, all maintained by the State. There are, in addition, the usual country tracks. The only British post office is situated at the capital, but the Darbār has a local postal system of its own.

Famine.

Famine is an exceptional occurrence. Distress is said to have prevailed in 1833–4, while in 1868–9 there was great scarcity of fodder and two-thirds of the cattle perished. The State suffered severely in 1899–1900, and it was not until the famine had well advanced that the Darbār made any practical effort to relieve the prevailing distress. Grain, fodder, and water were alike deficient. One-half of the cattle are said to have died, and, excluding cholera and

small-pox, the death-rate among human beings was higher than it should have been. More than 3,000,000 units were relieved on works, and 754,000 in poorhouses; the total direct expenditure by the Darbār exceeded 3·7 lakhs, while land revenue to the extent of 4 lakhs was remitted. In addition, a further sum of about 1·8 lakhs, granted by the committee of the Indian Charitable Relief Fund, was spent in giving extra food to the people and providing them with bullocks, grain, &c.

Administration

The State is governed by the Mahārao Rājā, assisted by a council, which is divided into five departments under five working members. The twelve *tahsīls* are each under a *tahsīldār*, and smaller subdivisions are under *patwāris* and *shahnas*.

For the guidance of the various courts of justice the State has its own criminal and civil codes, based on Hindu law, the customs of the country, and the similar enactments of British India. The lowest court is that of the *kotwāl*, whose jurisdiction is confined to the capital; this official disposes of petty civil suits not exceeding Rs. 25 in value, and on the criminal side can pass a sentence of one month's imprisonment or fine up to Rs. 11. Next come the courts of the *tahsīldārs*, of the two *kiladārs* or governors of the forts of Tārāgarh (at the capital) and Naenwa, and of an official known as the *jāgīr bakhshi*, who disposes of petty cases occurring in the estates of the *jāgīrdārs*. These courts have the same criminal powers as the *kotwāl*, and decide civil suits not exceeding Rs. 200 in value. The superior civil and criminal courts, namely those of the *Hākim dīwāni* and *Hākim faujdāri*, are located at the capital; they hear appeals against the decisions of all the courts mentioned above, and try cases beyond their powers. The civil court decides suits not exceeding Rs. 2,000 in value, while the criminal court can punish with imprisonment up to one year and fine up to Rs. 100. The highest court is that of the council, the final appellate authority in the State; it disposes of all cases beyond the powers of the two tribunals last mentioned, and when presided over by the Mahārao Rājā can pass sentence of death.

The normal revenue is nearly 6 lakhs, the chief sources being land (including tribute from *jāgīrdārs*), about 3·6 lakhs; and customs, 1·8 lakhs. The ordinary expenditure is about 5·6 lakhs, the main items being: cost of establishment (civil and judicial), 1·3 lakhs; army and police, 1·3 lakhs; tribute, 1·2 lakhs; and household expenditure (including the chief's privy purse), 1·2 lakhs. Owing principally to the famine of 1899–1900, the State owes about a lakh to the British Government, but has ample assets.

Būndi has had a silver coinage of its own since the time of Shāh Alam II, and there have been various issues under different names. Up to 1901 four kinds of rupees were current in the State: namely, the old rupee struck between 1759 and 1859; the *Gyārah sana* or rupee of the

eleventh year of Akbar II; the *Rām shāhi*, struck between 1859 and 1886, and named after the late chief; and the *Katār shāhi*, first coined in 1886, and so called from the dagger (*katār*) on its obverse. Of these coins, the *Gyārah sana* was always largely mixed with alloy, and was therefore used for charitable purposes, weddings, &c.; but the other rupees were at one time or another of the same value as the British rupee. The Būndi rupees depreciated to such an extent that, in 1899–1900, 162 of them exchanged for 100 British rupees. In 1901 the Darbār declared that in future the sole legal tender, besides British coin, would be the *Chehra shāhi*, which it proceeded to coin and issue. This rupee is said to be of pure silver, and now exchanges for 13¼ British annas.

The land revenue was formerly collected partly in cash and partly in kind, but since 1881 has been paid entirely in cash at rates then fixed by the Darbār. There are said to be 142 different rates for 'wet' and 99 for 'dry' land; they vary with the quality of the soil, the distance of the field from the village site, &c. The maximum and minimum rates per acre are: for 'wet' land Rs. 14–14–0 and Rs. 2–3–0, and for 'dry' land Rs. 8 and 2½ annas respectively, all in the local currency. In the *khālsa* area, comprising about two-thirds of the State, the cultivator, so long as he pays the demand regularly, is not disturbed in his possession. The *bhūmiās*, now few in number, are always Rājputs; they hold a few acres of land rent-free, and in return render miscellaneous services. They receive small quantities of grain from the cultivators of their villages, and every third year pay from one-third to one-half of their income to the Darbār. The *chauth-battas*, so called from the rent payable by them having been fixed at one-fourth of the produce of their fields, are also Rājputs, and their number is comparatively large. They now hold their land at a reduced rate and perform the same duties as the *bhūmiās*, but they receive no perquisites from their villages and are excused the tribute to the Darbār every third year. Lands are held on *jāgīr* tenure by relations and connexions of the chief, by other Rājputs, and in some cases by officials in lieu of salary. Some of the *jāgīrdārs* hold their lands rent-free, but the majority pay tribute; all have to perform service when called on, both in person and with their contingents, but the number of the latter is dependent rather on the will of the chief than on any fixed rating. All *jāgīr* estates are liable to be resumed for misconduct. *Khairāt* lands, or those granted to Brāhmans or religious and charitable institutions, are held rent-free and cannot be alienated. If the holder has no male issue, the land is resumed.

The military force consists of 350 regulars (100 cavalry, 200 infantry, and 50 artillerymen) and 400 irregular infantry; there are 48 serviceable guns.

The police force consists of 722 men, all unmounted. Of these, 79

do duty at the capital and the remainder are distributed over 13 *thānas* in the rest of the State. The Central jail has accommodation for 149 prisoners, and there are small lock-ups at the head-quarters of each *tahsīl*.

In respect of the literacy of its population Būndi stands fifteenth among the twenty States and chiefships of Rājputāna, with 2·5 per cent. (4·7 males and 0·1 females) able to read and write. Only two educational institutions are maintained by the State: namely, a high school at the capital, and a small vernacular school at Naenwa, which are attended by 200 boys, of whom 60 study English. There are said to be about 12 indigenous schools under private management. The total State expenditure on education is about Rs. 3,000 a year.

There is but one hospital, at the capital; it is maintained by the Darbār at a cost varying from Rs. 1,800 to Rs. 2,500 a year. Vaccination is nowhere compulsory, and is everywhere backward. A staff of two vaccinators is kept up, which in 1904–5 successfully vaccinated only 561 persons, or about 3 per 1,000 of the population, while the average number vaccinated in each of the previous five years was but 164.

[*Rājputāna Gazetteer*, vol. i (1879, under revision).]

Būndi Town.—Capital of the State of the same name in Rājputāna, situated in 25° 27′ N. and 75° 39′ E., about 100 miles south-east of Ajmer city. It is said to be named after a Mīnā chieftain called Būnda, from whose grandson it was taken by Rao Dewa about 1342. Population (1901), 19,313. The town possesses a combined post and telegraph office, a jail, a high school attended by 160 boys, and a hospital with accommodation for 11 in-patients, in which 9,362 cases were treated in 1904 and 343 operations were performed.

Būndi is one of the most picturesque towns in Rājputāna. It is situated in a gorge nearly surrounded by wooded hills, and is entirely enclosed within walled fortifications through which ingress and egress are obtained by means of four gateways: namely, the Bhairon Gate on the west, the Chaogān Gate on the south, the Pāton Pol on the east, and the Shūkl Baori Gate on the north. The streets and houses rise and fall with the unevenness of the ground, and some of the suburbs have crept upwards on both of the northern slopes. The principal bazar, nearly 50 feet in width, runs throughout the whole length of the town, but the other streets are narrow and very irregular. The palace, rising up above the town in pinnacled terraces on the slope of a hill having an elevation of over 1,400 feet above sea-level, is a striking feature of the place. Tod writes that, throughout Rājputāna, which boasts many fine palaces, that of Būndi

'is allowed to possess the first rank, for which it is indebted to situation not less than to the splendid additions which it has continually received: for it is an aggregate of palaces, each having the name of its founder,

and yet the whole so well harmonizes and the character of the architecture is so uniform that its breaks or fantasies appear only to arise from the peculiarity of the position and serve to diversify its beauties.'

Above the palace is the fort of Tārāgarh, and a spur of the same hill is surmounted by a large and very handsome *chhatri*, called the Sūraj or 'sun-dome,' whose cupola rests on sixteen pillars and is about 20 feet in diameter. Beyond this to the north-west lies the Phūl Sāgar or 'flower tank,' and a small palace, the summer residence of the chief; and to the south-west of this is the Nāya Bāgh or Bajrangbilās. To the north-east of the town is another tank, the Jet Sāgar or Bara Talao, on the embankment of which stands an open palace called the Sūkh Mahal; and a little farther on is the Sar Bāgh, the place of cremation for the Būndi chiefs. Immediately to the east of the town rises an abrupt cliff 1,426 feet above the sea; and on its summit is a small mosque said to have been built before the Hāra Rājputs came here, and called after Mīrān, a Muhammadan saint, whose tomb is at Ajmer.

Būndu.—Town in the Khunti subdivision of Rānchī District, Bengal, situated in 23° 10′ N. and 85° 36′ E. Population (1901), 5,469. Būndu is the centre of the lac industry in the District and a flourishing trade mart.

Buner.—A tract of country lying between 34° 22′ and 34° 37′ N. and 72° 15′ and 72° 48 E., on the north-east border of Peshāwar District, North-West Frontier Province. Its boundaries are: on the north, Swāt Kohistān; on the west, Swāt and Sam Rānizai; on the south, dependent tribes and Peshāwar District; on the east, the Black Mountain and Hazāra District. Political control is exercised by the Deputy-Commissioner of Peshāwar through the Assistant Commissioner at Mardān. Buner comprises the basin of the Barandu river, which joins the Indus near Amb. The main valley of the Barandu is about 10 miles broad, well cultivated and level; and though the side valleys are narrower and less fertile, they are better wooded. The aloofness of the inhabitants, arising from the fact that no trade arteries pierce the country, is very marked. They are, however, recognized by the clans who live between Buner and Peshāwar District, such as the Gaduns, Salarzai, Khudu Khel, &c., as the head of their confederacy.

The history of the tract is given in the article dealing with SWĀT. Buner with the neighbouring countries was included in the ancient kingdom of Udyāna, and abounds in archaeological remains of great interest, which date from the Buddhist era. The places most interesting from an archaeological view in Buner, or in the territory of tribes dependent on it, are Mahāban, Banj, Asgram, Panjkotai, Gumbatai, and Girārai. Mahāban has been conjecturally identified with Aornos, the rock besieged by Alexander; but the latest view, that of Dr. Stein, who visited Mahāban under tribal escort in 1904, is that the topography of

Aornos is inapplicable to Mahāban, and that the real Aornos, if there be such a place, must be sought elsewhere. In the same tour Banj was examined ; and the suggestion has been made that it is the famous place of Buddhist pilgrimage, at which a shrine was built to commemorate the offering of his body by the Buddha to feed a starving tigress. The buildings described by the Chinese pilgrims are now completely in ruins and all sculptures have been removed.

The ruins at Asgram are of some interest, and the place has been identified with the Asigramma of Ptolemy. Buner proper was traversed by Dr. Stein in January, 1898, with the force dispatched for the punishment of the Bunerwāls. In the report then published reasons were set forth for the identification of Panjkotai with the site of the famous Mahāwana monastery described by the Chinese pilgrims, of Gumbatai (Tursak) with the Mosu monastery and shrine, and of Girārai with the shrine commemorating Buddha's ransoming of a dove, also a place of pilgrimage.

Bunera.—Estate and chief town thereof in Udaipur State, Rājputāna. *See* BANERA.

Burdwān Division.—A Division or Commissionership in Bengal, lying between 21° 36′ and 24° 35′ N. and 86° 33′ and 88° 30′ E. The Division, which covers an area commonly known as West Bengal, includes all the Districts of Bengal proper west of the Bhāgīrathi, the earliest known channel of the Ganges, and corresponds roughly to the ancient Rārh and Tāmralipta. The Bhāgīrathi, called in its lower reaches the Hooghly, separates it from the Presidency Division, and it extends along the right bank of this river to its mouth in the Bay of Bengal. It is bounded on the south and west by the sub-provinces of Orissa and Chotā Nāgpur, and on the north by the Santāl Parganas and Murshidābād District.

Though outside the Gangetic delta, the eastern portion of the tract is low and of alluvial formation. Farther west, laterite begins to predominate, and the surface rises and becomes more and more undulating and rocky until at last, in the west of Bīrbhūm, Burdwān, Bānkurā, and Midnapore, it embraces the eastern fringe of the Chotā Nāgpur plateau.

Since the Division was constituted in 1854, the head-quarters have been several times moved between Burdwān, Howrah, Hooghly, and Chinsura. They were finally transferred to Chinsura in 1896. The table on next page gives details of the area, population, and land revenue of the six Districts of which the Division is composed.

The recorded population fell from 7,604,661 in 1872 to 7,393,954 in 1881, but rose again to 7,689,189 in 1891. The greater portion of the Division suffered severely from the ravages of the notorious Burdwān fever (*see* BURDWĀN DISTRICT), which broke out nearly half a century ago and caused a terrible mortality. During the last twenty years the

disease has gradually died out, and the population is at present rapidly increasing. There are now 591 inhabitants to the square mile. In 1901 Hindus constituted 83 per cent. of the population, Musalmāns 13 per cent., and Animists 3½per cent., while there were 9,463 Christians, of whom half were natives. The Division is peopled largely by castes closely allied to the tribes of Chotā Nāgpur, such as the Bāgdi, Bauri, Kaibartta, Kora, Māl, and Santāl. It is also the home of several distinctive castes with claims to a higher rank in the Hindu social system, such as the Aguri, Sukli, Sadgop, Kāyasth, and Rāju, and is the head-quarters of a well-known sub-caste of Brāhmans.

District.	Area in square miles.	Population, 1901.	Land revenue and cesses, 1903-4, in thousands of rupees.
Burdwān	2,689	1,532,475	35,35
Bīrbhūm	1,752	902,280	11,58
Bānkurā	2,621	1,116,411	5,72
Midnapore	5,186	2,789,114	28,02
Hooghly	1,191	1,049,282	15,87
Howrah *	510	850,514	
Total	13,949	8,240,076	96,54

* The land revenue and cesses of Howrah are paid into the Collectorate of Hooghly and are included in the figures for that District.

The Division contains 27 towns and 24,869 villages, the largest towns being HOWRAH, the great suburb of Calcutta (population, 157,594), SERAMPORE (44,451), BURDWĀN (35,022), MIDNAPORE (33,140), HOOGHLY with CHINSURA (29,383), and BĀNKURĀ (20,737). The BHĀGĪRATHI, the old channel of the Ganges, is still the sacred stream of the Hindus, TRĪBENI and TĀRAKESWAR in Hooghly District possess considerable religious importance, and in Bīrbhūm several localities are associated with the legends of Hindu mythology. The whole of the strip extending along the west bank of the Hooghly from north of Hooghly town to the south of Howrah is of great historic interest, containing the sites of the old capital of SĀTGAON and of successive settlements of the Portuguese, English, Dutch, French, and Danes at Bāndel, Hooghly, Chinsura, Chandernagore, and Serampore. The same tract, which includes Howrah, Bally, and Serampore, is now one of the most densely populated industrial areas in India. The north-west of the Division is rich in iron and coal, the centres of the industry being at RĀNĪGANJ and ASANSOL; the output of coal in 1903-4 amounted to 2,837,071 tons. Silk is manufactured in Midnapore, Bīrbhūm, and Bānkurā.

The greater part of the estates of the Mahārājā of Burdwān (*see* BURDWĀN RĀJ) lies within the Division. These were closely assessed

at the time of the Permanent Settlement, and the present land revenue of the Division thus exceeds that of the great Patna Division, which has nearly double its area and population.

Burdwān District.—District in the Burdwān Division of Bengal, lying between 22° 56′ and 23° 53′ N. and 86° 48′ and 88° 25′ E., with an area of 2,689 square miles. It is bounded on the north by the Santāl Parganas, Bīrbhūm, and Murshidābād; on the east by Nadiā; on the south by Hooghly, Midnapore, and Bānkurā; and on the west by Mānbhūm. The administrative head-quarters are at BURDWĀN TOWN.

Physical aspects.

About half of the District is flat, and in the east along the banks of the Bhāgīrathi the soil is waterlogged and swampy. In the north-west, however, the surface undulates, and it is here that the famous Rānīganj coal-field is situated. This corner of the District is one of the busiest industrial tracts in Bengal, and its coal and iron-fields are thronged by miners from the neighbouring Districts.

The principal rivers are the Dāmodar, the Dhalkisor or Dwārkeswar, the Kharī, the Bānka, and the Ajay, all eventually flowing into the Bhāgirathi or Hooghly, which demarcates the eastern boundary of the District. The Barākar, though not properly speaking a river of Burdwān, passes along the north-western boundary for a few miles before its junction with the Dāmodar. The Ajay touches Burdwān at its extreme north-western corner, and forms its northern boundary till shortly before its junction with the Bhāgīrathi. The Dwārkeswar runs for about 5 miles along the southern corner of the District. The Kharī, a tortuous stream rising in the Galsi *thāna*, joins the Bhāgīrathi some 6 miles north of Kālna. The Bānka, which also rises in the Galsi *thāna* and passes through the town of Burdwān, flows into the Kharī shortly before its junction with the Bhāgīrathi. The Kunur, which rises in the Farīdpur outpost, is a tributary of the Ajay; and the Singarān, which flows through the Rānīganj *thāna*, joins the Dāmodar.

The District is covered by alluvium, except in the Asansol subdivision, where Gondwāna rocks are exposed. These strata extend into the Districts of Bānkurā, the Santāl Parganas, and Mānbhūm, the outcrop covering an area of 500 square miles; they have a dip of from 5° to 25° to the south, and along the southern boundary are turned up and cut off by a great fault. The total thickness is estimated at 11,000 feet; and the strata are divisible into the Tālchers at the base, the Dāmodar in the centre, and the Pānchet at the top. The Tālchers consist of fine silty shales and soft sandstones, among which occur, generally towards the base of the group, well-rolled pebbles and boulders of gneiss and other metamorphic rocks. The Dāmodar series is subdivided, in ascending order, into the Barākar stage, the ironstone shales, and the

Rānīganj stage. The Barākars consist chiefly of sandstones, conglomerates, and coal-seams of somewhat irregular character, thinning out at short distances; black carbonaceous shales with numerous bands of clay ironstone constitute the ironstone shales; and the Rānīganj beds are made up of coarse and fine sandstones, mostly false-bedded and feldspathic, and shales and coal-seams, which are frequently continuous over considerable areas. The Pānchet group is composed of greenish and grey shales at the base, superimposed by red clays and coarse sandstones. All these groups have yielded plant fossils; and the Pānchet rocks contain, in addition, reptilian and fish remains.

In land under rice cultivation are found the usual marsh weeds ot the Gangetic plain and many sedges. On ponds and in ditches and still streams float aquatic plants and many submerged water-weeds. The District contains no forests, but the laterite country is in places clothed with coppices of *sāl* (*Shorea robusta*). The villages and towns are surrounded by the usual shrubberies of semi-spontaneous and sub-economic shrubs and small trees. Species of figs, notably the *pīpal* and the banyan, make up, along with bamboos, tamarind, red cotton-tree (*Bombax malabaricum*), mango (*Mangifera*), *Moringa*, and *Odina Wodier*, the arborescent part of these thickets, in which are often present the palms *Phoenix dactylifera* and *Borassus flabellifer*. Hedges and waste places are covered with climbing creepers and various milkweeds. Roadsides are often clothed with a sward of short grasses, and open glades with tall coarse grasses.

Leopards are found in the jungles adjoining the Bhāgīrathi, and wolves and hyenas are also occasionally met with.

Exceptionally high day temperatures are the feature of the hot season, the mean maximum rising to 101° in April. The mean temperature for the year is 80°. Humidity is comparatively low, the mean for the year being 77 per cent. The annual rainfall averages 54 inches, of which 9·2 inches fall in June, 12 in July, and 11·7 in August.

In 1770 the town of Burdwān was practically destroyed by a rising of the Dāmodar, and the whole country between this river and the Ajay was submerged. In September, 1823, the Dāmodar and Bhāgīrathi flooded the country, causing immense damage and loss of life; and in 1855 there was another serious flood, when the embankment on the right bank of the Dāmodar was destroyed. The country is now protected by embankments along the left bank of the Dāmodar and the right bank of the Ajay.

History.

Burdwān has been identified as the Parthalis or Portalis which, according to the Greek geographers, was the royal city of the Gangarides. In the seventh century, under the Gupta kings, the District formed part of a kingdom known as Karna Suvarna, and subsequently, under the Sen dynasty, of the Rārh division

of Bengal; more recently Gopbhūm appears to have been the seat of a Sadgop dynasty with head-quarters at Amrārgarh, where the long lines of fortification which enclosed the town are still visible.

Burdwān is first mentioned in Muhammadan histories in 1574, in which year, after Daud Khān's defeat and death at Rājmahāl, his family was captured in the town of Burdwān by Akbar's troops. About ten years later the District formed the scene of several engagements between Daud's son Kuttu and the imperial forces. In 1624 prince Khurram, afterwards the emperor Shāh Jahān, captured the fort and town of Burdwān. Soon afterwards Abu Rai, a Kāpur Khattrī, migrated to Bengal from the Punjab and founded the BURDWĀN RĀJ. The year 1696 was marked by the rebellion of Subha Singh, *zamīndār* of Chituā and Bardā, who, with the help of the Afghāns, slew the Rājā of Burdwān and overran a great part of the province. In the beginning of the eighteenth century the Marāthās made their appearance at Kātwa, and for the next fifty years the District suffered severely at their hands, the inhabitants frequently leaving their villages and seeking a refuge in the swamps. In 1760 the District of Burdwān, together with Midnapore and Chittagong, was ceded to the East India Company by Mīr Kāsim Khān on the deposition of Mīr Jafar Khān from the governorship of Bengal. At that time it comprised the present Districts of Burdwān, Bānkurā, Hooghly, and a third of Bīrbhūm. In 1805 the Bishnupur *zamīndāri* (Bānkurā) was included in the Jungle Mahāls, and in 1819 Hooghly was also separated from it. Numerous minor transfers took place until the year 1885, when the District assumed its present proportions.

Some interesting tombs are found in Burdwān town, and groups of Siva *lingam* temples at Burdwān and Kalna. In the Garh jungle near Senpahāri in the Kāksa *thāna* are the ruins of a fort said to have been built by Rājā Chitra Sen; and near Barākar at the foot of the Kalyāneswarī hill are temples whose building is attributed to an ancestor of the Rājā of Pānchet. The temples at Beguniā near Barākar also deserve mention.

Population.

The population of the present District area decreased from 1,486,400 in 1872 to 1,394,220 in 1881, and to 1,391,880 in 1891, but rose again to 1,532,475 in 1901. The District for many years suffered from a malarial fever of a very virulent type to which it gave its name. The real 'Burdwān fever,' which often proved fatal within one or two days, appears to have died out, though the District is still subject to fevers of a remittent type, the waterlogged tract along the bank of the Bhāgīrathi being particularly unhealthy. Cholera is seldom absent and is markedly endemic in the Kālna *thāna*, but there have been no outbreaks of special violence in recent years. The mortality due to this cause in 1902 was 1·87 per 1,000. Leprosy

is very prevalent, and 2·39 per 1,000 of the male population were afflicted with the disease in 1901. The increase of population in the last decade is due to the recovery of the District from the Burdwān fever and to the industrial development of the Asansol subdivision. The principal statistics of the Census of 1901 are shown below:—

Subdivision.	Area in square miles.	Number of		Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
		Towns.	Villages.				
Burdwān .	1,268	1	1,688	679,412	536	+ 9·6	64,255
Asansol .	618	2	811	370,988	600	+ 19·6	27,980
Kātwa . .	404	2	465	248,806	616	+ 8·1	20,035
Kālna . .	399	1	698	233,269	585	+ 0·8	18,018
District total	2,689	6	3,662	1,532,475	570	+ 10·1	130,288

The principal towns are BURDWĀN, the head-quarters, RĀNĪGANJ, ASANSOL, KĀLNA, and KĀTWA. A remarkable increase has taken place in the Asansol subdivision, where the development of the coal trade, especially in Asansol and Barākar, has created an enormous demand for labour. In the Asansol *thāna* alone the population has increased by more than 31 per cent. since 1891 and by 130 per cent. since 1872. In addition to the coal-mines, the iron-works, paper-mills, and potteries attract labourers in large numbers from Bānkurā, Mānbhūm, Hazāribāgh, the Santāl Parganas, Patna, Gayā, Shāhābād, Monghyr, and the United Provinces. On the other hand, numerous clerks emigrate to Calcutta and labourers to Assam. The vernacular is the dialect of Bengali known as Rārhī *boli* or the western patois. Hindus number 1,221,027, or more than 79 per cent. of the population, and Musalmāns 287,403, or 18 per cent.; among the remainder are 21,048 Animists and 2,960 Christians.

Of the Hindus, the semi-aboriginal Bāgdis (198,000) are the most numerous caste; the Bauris, another aboriginal race, number 113,000, Brāhmans 110,000, and Sadgops 106,000. The Sadgops, with the Aguris (66,000), who have sprung from them, have their head-quarters here. The Santāls (46,000) are chiefly employed in the coal-fields, though small settlements of them are to be found in the jungle throughout the District. Of the total population, 58·9 per cent. are supported by agriculture, 16·7 per cent. by industries, 1·3 per cent. by commerce, and 2·3 per cent. by the professions.

The number of Christians more than doubled between 1891 and 1901; but native Christians number little more than a third of the whole, and the increase is mainly due to the large number of Europeans and Eurasians attached to the railways and collieries. The Church

Missionary Society is at work in Burdwān town, and the Wesleyan Methodist Mission supports a leper asylum and other charitable institutions at Rānīganj. A Roman Catholic mission has a church and a boarding-school in Asansol, where the Methodist Episcopal Mission also maintains a leper asylum, orphanage, and school; while at Kālna a dispensary is kept up by the Scottish Free Church Mission. Native Christians numbered 1,027 in 1901.

Agriculture.

The alluvium which covers the greater part of the District is extremely fertile; but the uplands in the west and north are sterile, and in the undulating rocky country in the extreme north-west maize is the only crop that thrives. The chief agricultural statistics for 1903-4 are shown below in square miles:—

Subdivision.	Total.	Cultivated.	Cultivable waste.	Irrigated.
Burdwān . .	1,268	643	156	33
Asansol . .	618	257	76	...
Kātwa . .	404	172	44	...
Kālna . .	399	226	49	...
Total	2,689	1,298	325	33

NOTE.—The area shown as irrigated is that only which is watered from the Eden Canal.

Nearly a quarter of the cultivated area is twice cropped. Rice is the most important staple, occupying 1,221 square miles, or more than three-quarters of the total cultivated area; the winter rice covers four-fifths of the whole. Both the winter and early rice crops are transplanted, the latter being generally transplanted at the end of May and cut in the beginning of September, while the winter crop is transplanted in July and cut at the end of November or the beginning of December. In the Asansol subdivision rice is in some parts grown only in the hollows between the undulating hills; but the slopes are often terraced for rice cultivation, the water being retained by embankments, and in such cases the crop is reaped considerably later than elsewhere. Sugar-cane, oilseeds, and pulses are grown everywhere, and a small quantity of jute in the *thānas* of Kālna and Jamālpur. Maize is raised on the western border, and 1,700 acres are under indigo, though this crop is dying out. Potatoes are largely grown.

The area under cultivation is more or less stationary, but the amount of orchard and garden produce is increasing. An agricultural farm is maintained by the Burdwān Rāj at Pālla near Burdwān town, where experiments are conducted under the supervision of the Agricultural department. Little advantage has been taken of the Land Improvement Loans Act till recently; during the scarcity of 1897, Rs. 23,000 was advanced, and applications for loans are now becoming frequent.

The cattle are poor, and there are no large pasture-grounds except along the banks of the Bhāgīrathi; but straw and grass are plentiful. Annual fairs are held at Agradwīp, Uddhanpur, Dādia, Bāgnapāra, and Kānchannagar; these are primarily religious gatherings, but are used also for trade purposes.

About 33 square miles in the Burdwān and Jamālpur *thānas* and in the Memāri outpost are irrigated from the EDEN CANAL and its distributaries; and elsewhere small streams and tanks are often utilized for irrigation, the water being lifted on to the fields by hollowed tree-trunks known as *dongās*. In the Kāksa *thāna* near the Dāmodar a few shallow irrigation wells have been sunk.

Minerals.

The character of the coal-field has been described under Geology. The average of 31 assays of samples from different mines gives, as a result: moisture, 4·80 per cent.; volatile matter, 25·83 per cent.; fixed carbon, 53·20 per cent.; and ash, 16·17 per cent. The field extends from Andāl to Barākar in the Asansol subdivision. In spite of the difficulties caused by the scarcity of labour and shortage of wagons, the mining industry has made very rapid strides of late years. In 1903 there were 110 mines, with an output of 2,759,000 tons, the number of work-people employed being 30,566. Most of these collieries are managed by European companies with head-quarters in Calcutta, but some of them, notably the Siārsol collieries, are owned and worked by natives. Most of the pits are shallow and are worked by a system of inclines; cages are, however, used in all the principal European collieries, the deepest pit being one in the Disergarh colliery near Barākar. The coal is used by steamers, factories, and railways throughout India. Most of it is taken by rail to Calcutta, whence large quantities are exported to Bombay and Colombo. The miners are chiefly local Bauris or immigrant Santāls. They are usually paid 5 annas for loading a half-ton tub, and at this rate a man can earn 12 annas a day.

An iron-field is situated near Bārul, about 11 miles north of Rānīganj, and pig-iron is smelted at the Barākar Iron and Steel Works. In 1904 the out-turn was 40,000 tons of pig-iron valued at 17·30 lakhs, and 15,000 tons of castings valued at 12 lakhs. The ore is obtained chiefly from the ironstone shales of the Dāmodar series. Below the ground the ore is in the form of carbonate, but at the surface it consists of hematite and limonite.

The out-turn of the pottery works at Rānīganj was valued at 7 lakhs in 1904. The clays used are chiefly obtained in the neighbourhood of the coal-measures, and consist of more or less decomposed shales. A quantity of laterite road-metal is exported by rail from the Kāksa *thāna* in the Asansol subdivision.

Silk and cotton-weaving were formerly important industries; but

they have suffered from competition with English-made goods, though silk is still manufactured in small quantities at Rādhākāntpur and Memāri, and cotton in other places. Brasswork is made at Dainhāt, Begunkholā, Banpās, and several other places, and cutlery in Burdwān town. Shellac and lac dye are manufactured at Dīgnagar in the Ausgram *thāna*.

Trade and communications.

The District contains some important factories. The Bengal Iron and Steel Works at Kendwa, near Barākar, manufacture railway plant, and employ 1,900 operatives; the out-turn in 1903-4 was 43,737 tons, valued at 24·6 lakhs. Messrs. John King & Co., Engineers and Founders, of Howrah, have a branch of their business at Barākar. The Rānīganj potteries employ 1,500 operatives and turn out drain-pipes and roofing tiles; art pottery is also manufactured. The Bengal Paper Mills at Rānīganj employ 775 operatives, and in 1903-4 made 2,884 tons of paper valued at 8·65 lakhs. The Bengal Dyers and Skinners Company have opened works at Bānsra, near Rānīganj, and manufacture a tanning extract from myrabolams which is exported to Scotland. Finally, there are three oil-mills in Rānīganj and two in Burdwān town, the out-turn of which was valued in 1901 at $5\frac{3}{4}$ lakhs.

The principal exports, besides coal and iron, are rice, pulses of all sorts, rape-seed and oil-cake, while the imports are English piece-goods, salt, spices, and castor-oil. The imports and exports are mostly from and to Calcutta, but there is a considerable export of grain to the west. The chief centres of trade are the towns of RĀNĪGANJ, ASANSOL, and BURDWĀN. The importance of KĀTWA and KĀLNA has declined since the opening of the East Indian Railway. This now carries most of the trade, and the railway stations at Memāri, Mānkur, Pānāgarh, and Guskharā have become important centres.

The East Indian Railway chord-line (broad gauge) runs through the length of the District, the loop-line branching north at Khāna Junction. The Jherriā branch extension leaves the chord-line at Sītārāmpur, having a station at Barākar. The Andāl loop separates from the chord-line at Andāl and goes round to the north of the coal-fields, rejoining the chord at Alīpur; there is also an extension from this line to Tapasi. From Asansol a cross-line connects with the Bengal-Nāgpur Railway at Sini.

The grand trunk road traverses the District for 100 miles; this and portions of the Rānīganj-Midnapore road and the Lithoria road, near Sītārāmpur, are maintained by the District board with the help of a grant from Provincial funds. The District board maintains in all 175 miles of metalled and 253 miles of unmetalled roads, the most important being those connecting Burdwān town with Kātwa, Kālna, Arāmbāgh, and Bānkurā.

The chief waterway is the Bhāgīrathi, up which steamers ply to

Kālna all the year round; country boats also bring down a large quantity of grain from Nādanghāt, the principal rice mart in the interior. There are important ferries over the Bhāgīrathi and the Dāmodar.

Famine.

Burdwān suffered severely in the great famine of 1770. In 1866, the year of the Orissa famine, numbers of destitute persons flocked in from the surrounding Districts, and relief was given to 348,000 persons. Part of the District suffered during the famine of 1873–4, and there was some distress in 1884–5, when relief measures had to be undertaken in some isolated tracts and Rs. 7,000 was spent on gratuitous relief. Again in 1904 the failure of the rice crop caused considerable distress in the Kātwa and head-quarters subdivisions. The area affected was about 376 miles, and relief works were opened by the District board; but at no time did the number on relief rise above 2,981. Besides this expenditure, Rs. 35,000 was advanced in the shape of loans and Rs. 3,000 was spent in gratuitous relief.

Administration.

For administrative purposes the District is divided into four subdivisions, with head-quarters at BURDWĀN, ASANSOL, KĀLNA, and KĀTWA. The staff subordinate to the Magistrate-Collector at head-quarters consists of five Deputy-Collectors and occasionally a Joint-Magistrate. A Covenanted Civil Servant assisted by a Sub-Deputy-Collector is in charge of the Asansol subdivision; a Deputy-Collector assisted by a Sub-Deputy-Collector is in charge of the Kālna subdivision; and a Deputy-Collector with a *kānungo* is stationed at Kātwa.

The civil courts at Burdwān are those of the District Judge, an Additional Judge, a Sub-Judge, and five Munsifs; there are also Munsifs at Rānīganj and Kālna, and two at Kātwa. The criminal courts are those of the Sessions Judge, the District and subdivisional magistrates, and their subordinates. Dacoities frequently occur, and petty thefts and burglaries are very common in the Asansol subdivision, especially in the neighbourhood of Asansol.

At the settlement of Todar Mal the present District of Burdwān fell within various *sarkārs*, portions of which were subsequently amalgamated into one great *zamīndāri*, including the whole of Bānkurā and Pānchet (Mānbhūm) together with parts of Hooghly and Bīrbhūm. It had a revenue of 20·47 lakhs, and was granted to the East India Company in 1760. At the time of the Permanent Settlement in 1793 the Mahārājā of Burdwān, with whom it was settled, entered into an agreement to pay a revenue of 40·15 lakhs of *sicca* rupees and 1·94 lakhs *pulbandhi* (for up-keep of embankments). He experienced great difficulty in meeting the Government demand on this huge estate, but solved it by the creation of permanent leases known as *patnī* tenures, whose rent was fixed in perpetuity, but which could be

summarily sold in default of payment. The *patnīdārs* in their turn let their lands on lease to *dar-patnīdārs*, *dar-patnīdārs* to *sī-patnidārs*, and in some rare instances *sī-patnidārs* created *chahārum patnīs*. The sales were at first held by the Mahārājā, but subsequently the tenures were recognized by Government, and by the Patnī Sale Law (Regulation VIII of 1819) their sale was placed in the hands of the Collector. Most of the District is now held in *patnī* from the BURDWĀN RĀJ. There are also a large number of *aimmā* estates, originally granted free of revenue by the Muhammadan government, and other revenue-free estates and rent-free tenures, but many of the old service holdings, e.g. the *ghātwāli* lands, have been resumed. The land revenue demand of 30·49 lakhs is higher than that of any other part of Bengal, the incidence of Rs. 2–10–9 per cultivated acre being exceeded only in the neighbouring District of Hooghly. Nearly all the revenue is paid by 5,005 permanently settled estates, but 133 estates are temporarily settled and 38 held direct by Government, the revenue being Rs. 10,600 and Rs. 3,000 respectively. Rents rule higher than in any other part of Bengal, except Hooghly. They are lowest in the poor paddy lands in the Rānīganj and Asansol *thānas*, and highest in the rich alluvial soil farther east, ranging from Rs. 3–6 per acre in high lands to Rs. 9 in low lands, the average being Rs. 7–12–7.

The following table shows the collections of land revenue and of total revenue (principal heads only), in thousands of rupees :—

	1880–1.	1890–1.	1900–1.	1903–4.
Land revenue .	30,45	30,13	30,50	30,51
Total revenue .	38,36	40,51	45,18	46,32

Outside the six municipalities of BURDWĀN, KĀLNA, KĀTWA, DAINHĀT, RĀNĪGANJ, and ASANSOL, local affairs are managed by the District board, with subordinate local boards at Asansol, Kālna, and Kātwa. In 1903–4 the income of the District board was 2·74 lakhs, of which Rs. 1,67,000 was derived from rates; and the expenditure was 3·07 lakhs, of which Rs. 1,94,000 was spent on public works and Rs. 62,000 on education.

An embankment starting at Sīlla, 20 miles west of Burdwān town, protects the left bank of the Dāmodar. Another important embankment runs along the right bank of the Ajay in the Asansol subdivision, extending 7 miles from Gaur Bāzār to Kajlādihi, 4 miles from Bishnupur to Arjunbāri, and 11 miles from Sātkāhania to Sāgarpostā, a total length of 22 miles. The EDEN CANAL has been already mentioned.

The District contains 20 police stations and 14 outposts. The force under the District Superintendent in 1904 consisted of 7 inspectors, 42 sub-inspectors, 59 head constables, and 540 constables, including

154 town *chaukīdārs* stationed in the six municipalities; there was also a rural police force of 4,918 village watchmen and 393 *daffadārs* or head watchmen. There are still many watchmen, called *phāridārs*, *paiks*, and *ghātwāls*, who hold land in return for police services; but the majority of them have been replaced by paid watchmen under the Village Chaukīdāri Act, and the *ghātwāli* lands are now under resumption. The District jail at Burdwān town has accommodation for 256 prisoners, and subsidiary jails at the three subdivisional out-stations for 88.

In 1901 the proportion of literates was 8·5 per cent. (16·2 males and 0·8 females). The total number of pupils under instruction increased from 45,442 in 1881–2 to 47,139 in 1892–3 and 48,084 in 1900–1. In 1903–4, 47,434 boys and 3,396 girls were at school, being respectively 41·3 and 2·9 per cent. of the children of school-going age. The number of educational institutions, public and private, in that year was 1,412, including one Arts college, 138 secondary, 1,225 primary, and 48 special schools. The expenditure on education was 3·28 lakhs, of which Rs. 23,000 was met from Provincial funds, Rs. 57,000 from District funds, Rs. 4,000 from municipal funds, and 1·55 lakhs from fees. The most important institutions are the Burdwān Rāj College and a technical school in Burdwān town. A free high English school, established in 1863 by the trustees of the will of the late Bābu Sārada Prasād Singh Rai, at Chakdīghi also deserves mention. Of the primary schools nine are for the education of aboriginal tribes.

In 1903 the District contained 10 dispensaries, with accommodation for 108 in-patients; the cases of 56,000 out-patients and 2,086 in-patients were treated, and 3,918 operations were performed. The expenditure was Rs. 27,000, of which Rs. 1,700 was met by Government contributions, Rs. 7,000 from Local and Rs. 13,000 from municipal funds, and Rs. 4,000 from subscriptions.

Vaccination is compulsory only within municipal areas. Elsewhere it is backward, and in 1903–4 only 45,000 persons, representing 31 per 1,000 of the population, were vaccinated, or rather less than the general average for Bengal.

[Sir W. W. Hunter, *Annals of Rural Bengal* (1868), and *Statistical Account of Bengal*, vol. iv (1876); 'Burdwān Rāj,' *Calcutta Review* (1872); A. C. Sen, *Agricultural Experiments and Inquiries in the Burdwān Division* (Calcutta, 1886, reprinted 1897); W. B. Oldham, *Some Historical and Ethnical Aspects of the Burdwān District* (Calcutta, 1894); W. T. Blanford, 'The Raniganj Coal-field,' *Memoirs, Geological Survey of India*, vol. iii, part i.]

Burdwān Subdivision.—Head-quarters subdivision of Burdwān District, Bengal, lying between 22° 56′ and 23° 37′ N. and 87° 26′ and 88° 14′ E., with an area of 1,268 square miles. The subdivision con-

sists of a flat alluvial plain, covered with rice crops. The population in 1901 was 679,412, compared with 619,868 in 1891. It contains one town, BURDWĀN (population, 35,022), its head-quarters; and 1,688 villages. It is less densely populated than the rest of the District, supporting only 536 persons to the square mile. Brass and bell-metal ware and cutlery are manufactured at Banpās, and silk *dhotīs* and *sārīs* at Memāri; a large annual fair is held at Kānchannagar, a suburb of Burdwān town. A considerable *tasar* silk industry is carried on at Mānkur, which is also an important trade centre.

Burdwān Rāj.—Estate in Bengal, comprising an area of 4,194 square miles, in nineteen Districts, but chiefly in Burdwān, Mānbhūm, Hooghly, and Bīrbhūm. The Burdwān Rājās trace their origin back to 1657, when Abu Rai, a Kāpur Khattrī of Kotli in Lahore, who had migrated to Burdwān, was appointed *chaudhri* and *kotwāl* of Rikābi Bāzār in the town of Burdwān, under the *faujdār* of *chakla* Burdwān. The *zamīndār* who held the estate in 1696 was defeated and slain by the rebellious Subha Singh, but the latter was in his turn killed by the Rāj Kumāri, whom he was attempting to outrage. The title of Rājā was first conferred on Chitra Sen Rai in 1741; but the best-known representatives of the family have been Kīrti Chandra (1702–40), who conquered and annexed the petty kingdoms of Chandrakonā and Bardā near Ghātāl in Midnapore; Tilak Chānd (1744–71), who was vested with the title of Mahārāj Adhirāj Bahādur; and Mahtāb Chānd (1832–79), who assisted the Government in suppressing the Santāl rebellion of 1855, and later at the time of the Mutiny, and who was appointed a Member of the Viceroy's Legislative Council. Mahārājā Aftāb Chānd (1881–5) died without heirs, and his widow adopted the present Mahārāj Adhirāj, Bijoy Chānd Mahtāb Bahādur, son of Rājā Ban Bihāri Kāpur. During his minority the estate was administered by the Court of Wards, and was managed with conspicuous success by Rājā Ban Bihāri Kāpur, first as joint and later as sole manager. The Mahārājā on coming of age was installed in February, 1903, by the Lieutenant-Governor of Bengal, and visited England in 1906.

The territorial extent of the Burdwān *zamīndāri* at the close of the seventeenth century was limited to 6 or 7 *parganas*, but Mahārājā Kīrti Chandra increased it to 57 *parganas*, extending over 5,000 square miles. At the time of the cession of Burdwān to the Company in 1760, the revenue payable was assessed at 31·75 lakhs for three years, after which it was reassessed at 41·72 lakhs, the increase being due to the resumption of lands hitherto held as *bāze-zāmīn* without payment of revenue. At the Permanent Settlement the Mahārājā entered into an agreement with the Government to pay a revenue of *sicca* Rs. 40,15,109, and *sicca* Rs. 1,93,721 for *pulbandhi* or repair of embankments. The difficulty which he experienced in meeting the

Government demand was eventually solved by the creation of leases under the *patnī* tenure. The main conditions of this tenure, which is of a permanent character, are the hypothecation of the land as security for the punctual payment of rent, and liability to summary sale for default. In 1799 the Mahārājā gave away a large portion of the estate in these leases; and the system, which was legalized by Regulation VIII of 1819, was gradually extended, so that by 1825 nearly the whole estate had been leased out in this manner. When defaulting tenures were bought in by the proprietor for want of adequate bids, it was formerly the custom to relet the lands covered by them in *patnī*, but under the administration of the Court of Wards they were kept under direct management; between 1891 and 1896 these lands, which are known as *khās mahāls*, were regularly surveyed and settled. The operations extended to Burdwān, Hooghly, and Bāndurā Districts, embracing an area of 107 square miles, which was settled at a rental of Rs. 95,000.

The Mahārājā of Burdwān is the largest revenue-payer in India, the present demand from the estate on account of land revenue and cesses being 31·7 lakhs and 3·3 lakhs respectively. Owing to the close assessment made at the time of the Permanent Settlement, the incidence of land revenue in the Burdwān estate is remarkably high for Bengal.

Burdwān Town (*Bārdhamāna*, the 'increasing' or 'prosperous'). —Head-quarters of Burdwān District, Bengal, situated in 23° 14′ N. and 87° 51 E., on the Bānka river. Population (1901), 35,022 (excluding 3,669 persons within railway limits), of whom 25,453 were Hindus and 9,441 Musalmāns, while 128 belonged to other religions. The town really consists of numerous small villages scattered over an area of 9 square miles, and the greater part of it is rural in character. In 1814 the population was estimated at 53,927. For a long time the town was looked upon as a sanitarium; but it suffered very severely from the Burdwān fever from 1863 onwards, and though now free from this virulent type of fever, it is still very unhealthy. It was the headquarters of the Commissioner of the Burdwān Division from 1854 to 1871, and again from 1884 to 1896.

The town is first mentioned in history as having been captured by prince Khurram in 1624, and again in 1696 by the Hindu rebel Subha Singh. There are several ancient tombs, the most interesting being those of Pīr Bahrām Shāh, Khoja Anwār Shāh, Sher Afghan, and Kutb-ud-dīn; and a group of 108 Siva *lingam* temples constructed in 1788 is situated at Nawāb Hāt, about 2 miles from the town. Within the town itself the principal places of interest are the palaces and gardens of the Mahārājā. Cutlery is manufactured, and there are two oil-mills; a large annual fair is held at Kānchannagar, one of the suburbs. Burd-

wān was constituted a municipality in 1865. The income during the decade ending 1901–2 averaged Rs. 1,13,300, and the expenditure Rs. 1,00,300. In 1903–4, out of a total income of Rs. 1,43,000, Rs. 39,000 was derived from a tax on houses and lands, Rs. 24,000 from a water rate, Rs. 17,000 from a conservancy rate, Rs. 6,000 from a tax on vehicles, Rs. 4,000 each from tolls and from rents, Rs. 3,000 from markets, and Rs. 5,000 from educational institutions. The incidence of taxation was Rs. 2–8–7 per head of the population. In the same year the expenditure of Rs. 1,10,000 included Rs. 4,000 spent on lighting, Rs. 2,000 on drainage, Rs. 32,000 on conservancy, Rs. 11,000 on medical relief, Rs. 12,000 on roads, and Rs. 7,000 on education.

Water-works constructed at a cost of 2 lakhs were opened in 1884, the Mahārājā of Burdwān contributing half a lakh, and the remainder being borrowed from Government; the health of the town has since greatly improved. The town possesses the usual public offices. The District jail has accommodation for 256 prisoners, the chief industries being *surki* pounding and the manufacture of oil and *newār*; carpets are also made, and indigo dyeing is carried on on a small scale. The most important educational institutions are the Burdwān Rāj College, a free institution maintained by the Rāj, and a technical school affiliated to the Sibpur Engineering College and maintained by the District board with a contribution from the municipality.

Būrha.—Former name of BĀLĀGHĀT TOWN, in Bālāghāt District, Central Provinces.

Burhāmpur.—Town in Nimār District, Central Provinces. *See* BURHĀNPUR.

Burhānā.—*Tahsīl* and town in Muzaffarnagar District, United Provinces. *See* BUDHĀNĀ.

Burhānpur Tahsīl.—Southern *tahsīl* of Nimār District, Central Provinces, lying between 21° 5′ and 21° 37′ N. and 75° 57′ and 76° 48′ E., with an area of 1,138 square miles. The population in 1901 was 92,933, compared with 81,366 in 1891. The *tahsīl* has one town, BURHĀNPUR (population, 33,341), the head-quarters; and 194 villages. It also contains the ancient fort of ASĪRGARH. The average density is 82 persons per square mile, but the town of Burhānpur contains more than a third of the whole population of the *tahsīl*. Excluding 737 square miles of Government forest, 72 per cent. of the available area is occupied for cultivation. The cultivated area in 1903–4 was 241 square miles. The demand for land revenue in the same year was Rs. 1,24,000, and for cesses Rs. 17,000. The *tahsīl* lies in the valley of the Tāpti, a narrow strip of very fertile land, with hills on the north and south. The upper or eastern part of the valley, though containing excellent soil, is mainly covered by forest. This land is now in process of allotment on the *ryotwāri* system.

Burhānpur Town.—Head-quarters of the *tahsīl* of the same name, Nimār District, Central Provinces, situated in 21° 18′ N. and 76° 14′ E., on the Great Indian Peninsula Railway, 310 miles from Bombay, the station being at Lālbāgh, a suburb 2 miles distant from the town and not included in the municipality. The town is surrounded by a masonry wall with massive gates on the main roads, and the Tāpti river flows along the southern side. The space contained within the walls is two miles in length from north to south, and half a mile in breadth; but numerous remains outside show that the suburbs must once have been very extensive. The population at the last four enumerations was: (1872) 29,303, (1881) 30,017, (1891) 32,252, and (1901) 33,341, including 21,762 Hindus and 11,253 Muhammadans. Among the Musalmāns are a number of Behnās or cotton-cleaners, and there is also a large community of Bohrās, a sect of Gujarātī merchants.

Burhānpur was founded about 1400 by Nāsir Khān, the first independent prince of the Fārūki dynasty of Khāndesh, and called by him after the famous Shaikh, Burhān-ud-dīn of Daulatābād. Zainābād on the opposite side of the Tāpti was founded at the same time, and called after another Shaikh, Zain-ud-dīn. Burhānpur was the usual residence of all the later Fārūki kings, and it was during their rule of two centuries that the two great mosques called the Jāma Masjid and the Bībī Masjid were built. In 1600 Burhānpur, with the kingdom of the Fārūkis, was annexed by the emperor Akbar. Under Akbar and his successor, Burhānpur was greatly embellished. In the *Ain-i-Akbarī* it is described as a 'large city with many gardens, in some of which is found sandal-wood, inhabited by people of all nations and abounding with handicraftsmen. In the summer the town is covered with dust, and during the rains the streets are full of mud and stone.' Burhānpur formed the seat of government of the Deccan princes of the empire till 1635, when Aurangābād took its place. After this event, Burhānpur became the capital of the large *Sūbah* of Khāndesh, usually governed by a prince of the royal blood. The transfer had not occurred at the time when Sir Thomas Roe, Ambassador in 1614 from James I to the Great Mughal, paid his visit to prince Parvez, son of Jahāngīr. Forty-four years after Sir Thomas Roe's visit Tavernier described Burhānpur (or as he wrote it, Brampour), through which he then passed for the second time, as 'a great city very much ruined, the houses being for the most part thatched with straw.' He adds: 'There is also a great castle in the midst of the city, where the governor lives. The government of this province is a very considerable command, only conferred upon the son or uncle of the king. There is a great trade in this city; and as well in Brampour as over all the Provinces, there is made a prodigious quantity of calicuts, very clear and white, which are transported into Persia, Turkey, and Muscovia, Poland, Arabia, to Grand Cairo, and

other places.' The remains of mosques and other buildings show that, at the height of its prosperity under the Mughals, Burhānpur extended over an area of about five square miles. The city continued to play an important part in the wars of the empire, particularly in the reign of Aurangzeb. It was plundered in 1685 by the Marāthās just after the emperor had left it with an enormous army to subjugate the Deccan. Repeated battles were afterwards fought in its neighbourhood, until in 1719 the demands of the Marāthās for the *chauth* or one-fourth of the revenue was formally conceded. Between 1720 and 1748 Burhānpur was the head-quarters of the Nizām Asaf Jāh, who then possessed the government of the Deccan. It afterwards belonged to the Peshwā and Sindhia, and was taken by General Wellesley's army in 1803, but did not finally become British territory until 1860. In 1849 Burhānpur was the scene of a desperate and sanguinary affray between the Muhammadans and Hindus. In 1897 a large part of the town was destroyed by fire, and in 1903 there was a severe outbreak of plague with 1,872 deaths. The Bībī Masjid is now in a bad state of repair; but the Jāma Masjid, which was built by Alī Khān in 1588 and visited by Akbar twelve years later, is a fine building, decorated with stone carvings executed in perfect taste. Along the river bank the ruins of the fort rise to a great height, and the remains of lofty halls bear testimony to the magnificence of its palace. The tombs in the suburbs include those of Mubārak Shāh and Adil Shāh, which are under repair.

Burhānpur was created a municipality in 1869. The municipal receipts and expenditure during the decade ending 1901 averaged Rs. 65,000. In 1903–4 the income was Rs. 62,000, including octroi (Rs. 44,000) and conservancy (Rs. 7,000); and the principal items of expenditure, out of a total of Rs. 54,000, were sanitation (Rs. 13,000), education (Rs. 6,000), general administration and collection of taxes (Rs. 6,000), and refunds of duty on goods in transit (Rs. 5,000). A system of water-works was completed by the Mughal emperor Jahāngīr in the seventeenth century. Several lines of subterranean wells were constructed to catch the water percolating from the hills to the centre of the valley, and connected by conduits leading into masonry reservoirs. Eight lines of wells can be traced, but all except two are quite out of repair. From the reservoirs water was distributed to the town by a system of earthenware or stone pipes, furnished at short intervals with tall hollow columns of masonry, which served the purpose of stand-pipes from which the water could be drawn off. The present scheme, which was completed in 1894, involved the construction of masonry channels for the conduits, and the substitution of cast-iron pipes with sluice-valves and stand-posts for the old earthenware and stone channels. The work cost 1·43 lakhs and the annual maintenance charges are Rs. 3,200. No water rate is yet levied except on private connexions.

Burhānpur has a considerable export trade in raw cotton, and the town contains three ginning factories. Two more ginning factories and two presses have been established at Lālbāgh. The principal hand industry of the town is the production of silk cloths embroidered with gold and silver lace, which continues now in the same manner as described by Tavernier. The manufacture of the gold wire is distinct from the weaving industry, and is carried on by a special set of craftsmen. About 2,000 persons were supported in 1901 by the wire-drawing industry, and the same number by silk-weaving. Another small industry is the manufacture of rough globes of coloured and frosted glass for decorative purposes. The construction of the railway has deprived Burhānpur of the favourable position it formerly enjoyed as the main trade centre between Hindustān and the Deccan, while changes in fashion have decreased the demand for its costly embroidered fabrics. The population, however, continues to increase at a slow rate. Burhānpur contains an English middle and girls' school, several branch schools, and a dispensary.

Burhwal.—Railway junction in the Fatehpur *tahsīl* of Bāra Bankī District, situated in 27° 5′ N. and 81° 24′ E. The main line of the Bengal and North-Western Railway meets the Oudh and Rohilkhand Railway metre-gauge here, while a branch of the broad-gauge line runs to Bahrāmghāt. A branch of the Bengal and North-Western Railway to Sītāpur has been projected.

Buri Dihing.—River in Lakhimpur District, Eastern Bengal and Assam. *See* DIHING, BURI.

Būriya.—Town in the Jagādhri *tahsīl* of Ambāla District, Punjab, situated in 30° 10′ N. and 77° 22′ E., 3 miles north of the North-Western Railway. Population (1901), 5,865. Founded in the time of the emperor Humāyūn, it was captured by the Sikhs in 1760, and became the head-quarters of a considerable principality, one of the nine that were exempted from the reforms of 1849, and allowed to retain a certain amount of independence for some time after the reduction of the other Cis-Sutlej chiefs to the position of *jāgīrdārs*. Part of the estate has now lapsed, and part is held in *jāgīr* by the Būriya family. The town is of no commercial importance. The municipality was created in 1867. The income during the ten years ending 1902–3 averaged Rs. 4,300, and the expenditure Rs. 5,100. The income in 1903–4 amounted to Rs. 4,500, chiefly from octroi; and the expenditure was Rs. 4,400. There is a vernacular middle school.

Burma.—The name given to the country stretching along the western edge of that portion of the continent of Asia which lies between the Bay of Bengal and the China Sea and is known generally as Indo-China. It is situated between 9° 58′ and 27° 20′ N. and 92° 11′ and 101° 9′ E., covering a superficial area of approximately

237,000 square miles, of which 169,000 are under direct British administration, while 68,000 belong to dependent Native States. Due north the boundary between Burma, Tibet, and China has not been precisely determined. Assam, Manipur, the Lushai Hills, and the Chittagong Hill Tracts hem it in on the north-west, and its western border is the Bay of Bengal. Its north-eastern and eastern frontiers march with the Chinese Province of Yünnan, the Chinese-Shan and the Lao States, the French possessions in Indo-China, and the kingdom of Siam; and on the south it is bounded by that portion of Siam which forms part of the Malay Peninsula. It thus constitutes the easternmost rampart of the Indian Empire. Its extreme width is approximately 500 miles and its extreme length about 1,200 miles: in other words, its northernmost and southernmost points, the first near the head-waters of the Irrawaddy in the neighbourhood of Tibet, the second on the Isthmus of Kra on the Siamese Malay border, are about as far removed from each other as is Allahābād from Cape Comorin or Lahore from Chittagong. With the exception of the three southern Districts of Tenasserim—Amherst, Tavoy, and Mergui—Burma (with the Shan States) forms a fairly compact lozenge-shaped quadrilateral area, with its southern and northern angles at Cape Negrais and Hkamti Long, and its western and eastern corners at Maungdaw on the Naaf river in Arakan and in the bend of the Mekong river which takes in the eastern corner of the Shan State of Kengtung. The Districts of Amherst, Tavoy, and Mergui form a straggling southern adjunct to the rest of the Province, connecting it with the Malay Peninsula. In the second edition of the *Imperial Gazetteer* the shape of British Burma, as it figured on the map in 1885, was likened to a 'sea-gull travelling towards the east with wide, extended wings,' the northern pinion being Arakan, the southern Tenasserim, and the body including the valley of the Irrawaddy and Sittang. Matters have so progressed since then that the country would now more properly be compared by the imaginative to a kite, with its head pointed due north and a string or tail depending from its south-eastward end.

The origin of the word 'Burma' is by no means certain. It is argued, on the one hand, that the name came from India in the shape of 'Brahmā'; on the other, that it is a corruption of the Chinese name for the Burmese race. The former was the view held by Sir Arthur Phayre; and, when it is borne in mind that in the works of European writers of the seventeenth and eighteenth centuries the country is occasionally referred to as 'Brāmā,' there would certainly appear to be prima facie grounds for the theory. At no time, however, has Brāhmanism found a footing in more than an insignificant portion of what is now Burma; and, on the whole, the weight of opinion appears to lean towards the second hypothesis, which was originated

by the late Bishop Bigandet, the scholarly Vicar Apostolic of Southern Burma. 'Mien' is the Chinese for Burma[1], and the Burmese name for Burma was and still is written Myanmā, though ordinarily pronounced Bamā. The Shans called Burma the country of the Mans, the term 'Man' having been originally applied by the Chinese to a group of tribes, including the Lolo and the Mantzu, who are found in considerable numbers in the Province of Ssuch'uan. The Manipurīs on the north-west frontier of the Province call the Burmans 'Maran.' Burmans in Kachin and Maru are styled 'Myeng'; and among the Palaungs, a Mon-Anam pre-Burman hill tribe inhabiting the north of the Shan States, who are absolutely free from the suspicion of exposure to Hindu influences, Burma is known as 'Bran.' In short, internal evidence all points to a Mongolian derivation.

Physical aspects.

Burma is split up into natural divisions by its rivers and mountain ranges. The valleys of the IRRAWADDY, CHINDWIN, and SITTANG form a narrow strip of plain land, running down the centre of the main mass and widening out into the delta country on either side of Rangoon. The sea forms the southern limit of this strip. On all other sides the central level is enclosed by hill ridges—in the north by the Kachin, in the west by the Chin, in the east by the Shan and Karen Hills; and, as the general direction of streams and ranges alike is north and south, a geographical dissection results in the presentation to the observer of a series of more or less vertical stretches of territory following the line of the coast. Prior to 1852 British dominion was represented by the provinces of Arakan and Tenasserim, two narrow fringes of the seaboard of Indo-China. The Burmese War of 1852 filled up the gap between the extreme ends of these two strips, and added to British territory the southern portions of the main central section of Burma lying along the valley of the Irrawaddy, and of the long stretch of highland rising between the Irrawaddy and the Salween. Thirty-four years later, with the annexation of Upper Burma, these accretions were again extended to the north. The whole of the valley of the Irrawaddy, with its tributary the Chindwin, now forms an integral part of the Indian Empire, and the table-land between the Irrawaddy and the Salween acknowledges British suzerainty as far north as the confines of Yünnan. At the same time control was acquired over the Chin Hills, an oblong strip of hill country in the north-west, forming part of the general mass of upland of which the Yoma ('main ridge') separating Arakan from the Irrawaddy valley is the most southerly spur. To the east of the Salween there is a further stretch of country bounded on its east by the Mekong. A large portion of this area belongs to the Shan States and forms part of the Indian Empire. Its

[1] Cf. Marco Polo's 'Kingdom of Mien' and 'Province of Amien.'

precise limits are as yet undetermined; and the hold over its northern end, peopled by the most backward of all the wild communities that inhabit the Province, the Was, is at present of the lightest.

With reference to rainfall and population, Burma falls into four main natural divisions: the Upper Burma wet, the Upper Burma dry, the Lower Burma littoral and deltaic, and the Lower Burma sub-deltaic. The Upper Burma wet division, with a rainfall of over 50 inches, comprises the Shan States, the Chin Hills, and the Districts of Kathā, Bhamo, Myitkyinā, the Upper Chindwin, and the Ruby Mines: i.e. portions of the Mandalay and Sagaing Commissionerships. This mass of hill country is the home of the Shans of the Shan States, the Shans of Burma proper, the Kachins, the Chins, and a host of other hill tribes, and may be said, roughly speaking, to comprise the whole of the non-Burman areas of Upper Burma.

The Upper Burma dry division is an arid zone which extends across the valley of the Irrawaddy from the 20th to the 23rd parallel of latitude, and consists of plain land with a few sporadic hill masses dotted over its surface. It embraces the Districts of Minbu, Magwe, Pakokku, Mandalay, Shwebo, Sagaing, Lower Chindwin, Kyaukse, Meiktila, Yamethin, and Myingyan—i.e. portions of the Mandalay, Sagaing, and Minbu Commissionerships, and the whole of Meiktila—being more or less conterminous with the limits of the old kingdom of Ava. Most of the old Burmese capitals—Pagan, Sagaing, Ava, Shwebo, Amarapura, and Mandalay—are situated within its limits, and the preponderating element of its population is still Burman. The rainfall is slight, save at its fringes.

The wet division of Lower Burma stretches down the entire length of the coast, including the whole of the Arakan and parts of the Tenasserim, Pegu, and Irrawaddy Commissionerships. North and south of the delta country hill ranges approach the sea-face, islands abound, and such lowlanders as there are have found a footing only in the valleys and exiguous stretches of plain land that occur here and there along the seaboard. Pure Burmans are comparatively scarce in this area. Arakanese, Bengalis, and Chins form a large proportion in the Arakan portion, while to the south the Karens, Taungthus, Talaings, Siamese, Salons, and Tavoyans make up a considerable section of the community. The rainfall is ordinarily far in excess of 100 inches per annum. The Districts of Akyab, Sandoway, Kyaukpyu, Amherst, Thaton, Tavoy, and Mergui belong to this division, as also the Hill Tracts of Northern Arakan and Salween.

In the delta proper—i.e. in the Districts of Bassein, Pyapon, Myaungmya, Maubin, Hanthawaddy, and Pegu—the country is practically all a dead level. Such rising ground as is found at its limits is of inconsiderable height. The population is relatively dense, and

the rainfall not so heavy as along the coast hills, seldom rising above 100 inches per annum. With the delta Districts are intimately connected five comparatively dry Districts, belonging to the Commissionerships of Minbu, Pegu, Irrawaddy, and Tenasserim, which, for want of a better classification, have been designated the sub-deltaic Districts of Lower Burma. They mark the border-land between the wet and the dry areas, and partake to a certain extent of the characteristics of both. Thayetmyo is almost a dry zone District; Henzada is practically deltaic; Tharrawaddy, Prome, and Toungoo have features of their own. All, however, have a rainfall of below 90 inches; all are in Lower Burma; none actually touches the coast; and on the whole all possess enough similarity with each other, and differ sufficiently from their neighbours, to justify their being placed together in one category. In the delta and in the sub-deltaic Districts the Burman element again asserts itself, though there is a far greater admixture of Karens, Talaings, and other non-Burman Indo-Chinese races than in the Districts of the arid zone.

Within its borders Burma can show scenery of surprising variety. In the remote uplands of the extreme north the piled hill masses raise their heads almost into the region of eternal snow, their blue crests encompassing the head-waters of the great streams that they dismiss southwards to the ocean; and from end to end of the Province there are but few spots from which one or other of the long forest-clad spurs that stretch downwards towards the southern seas cannot be seen closing in the prospect on the one hand or the other. They are visible alike from the silk bazar in Mandalay and from the roadstead of Moulmein; the traveller skirts them for half a day in his train journey from Rangoon to the north; they follow the seafarer down the coast from Akyab to Maliwun. Their flanks are clothed with dense bamboo or tree jungle. Here and there, amid the more sombre green, a vivid patch points to the handiwork of the *taungya*-cutter. Down all the countless valleys that furrow the uplands, streams wend their way plainwards, marking their passage through the forest by a sinuous streak of richer verdure; and where the line is broken by waving plantain tufts, there, one may be sure, thatched roofs will proclaim a village, with possibly its monastery embowered amid the trees, and a whitewashed pagoda or two. Low-lying stretches of swampy land covered with grey-green *kaing* grass abound in the valleys and hollows of the hills, and point to the countless acres of waste still capable of being brought under cultivation. These stretches open out towards the plains, and are swallowed up in the wide paddy-fields that follow the line of all the principal watercourses of the Province. This is the typical scenery of the north of Upper Burma. Farther south in the dry zone the aspect of things is in marked contrast. Luxuriant vegetation no longer

meets the eye. On every hand the country rolls away in stretches of a dull yellow ochre. Sparse, stunted vegetation clothes the arid ridges. Through the hollows toddy palms are scattered, and almost every eminence is crowned with a pagoda spire. In place of narrow forest paths, encroached on by undergrowth and blocked by fallen trees, we have here stony cart-tracks radiating unimpeded across the face of the country, rising and falling with its undulations, leading through hedges of cactus, past bleak collections of huts that lie huddled away within ring fences of thorn bushes and are barely distinguishable during the dry season from their drab surroundings. From Thayetmyo southwards conditions outwardly more pleasing prevail. The scenery of the north is reproduced, though on a somewhat less imposing scale. Green jungle-clad heights look down upon the stream, and smiling tracts of rice land tell of a generous rainfall. South of Prome the hills fall back from the river; elephant-grass and paddy-fields spread like a sea on either hand; the horizon is bounded by the nearest clump of trees that rises appreciably above the level of the fields, and the breaking up of the waters into a network of muddy tidal creeks proclaims that the delta has been reached and that the sea is near. A southward course takes the traveller out to sea; but long after the low coast has dropped behind the horizon, the brown flood through which the vessel ploughs tells of the vast volume of silt that the Irrawaddy has carried down with it through the Lower Burma plains. In time, however, clear water and fresh prospects are reached. The coast-line that soon lifts into view in the east is fringed with hills clad with tropical vegetation down to the beach's edge. Amid their hollows nestle sandy coves; and, as the course towards the equator is maintained, wooded islands rise up into view out of the blue sea in ever and ever greater numbers, till at length the southern limit of the Province is reached amid the beautiful pearling grounds of the Mergui Archipelago.

Outside the Districts of the dry zone and the areas around the Irrawaddy delta there is but little level land in Burma. To the extreme north the country is a labyrinth of hills, the habitat of the Kachins and other cognate tribes; and it is from this remote region, or even from the Tibetan plateau still farther north, that all the main hill systems of the Province start. Towards the south the chains diverge and take lines of their own; but so dense is the massing in the angle caused by the converging of the Assam and China frontiers, that the only general classification possible is that which distinguishes the highlands lying to the west from those lying to the east of the Irrawaddy. The former may be considered first. To the north-west of the point in Myitkyinā District where the Malikha (*kha* = 'stream') and the N'maikha unite their waters and become the Irrawaddy, lies the

Hukawng valley, the cradle of the Chindwin river. To the east of this basin the Kumon range runs down from Hkamti Long towards the neighbourhood of Mogaung; and the main trend of upland is continued southwards, where this system ceases, by a succession of ridges which form the watershed between the Irrawaddy and the Chindwin. The Taungthonlon, an eminence 5,652 feet in height, marks the northernmost point of the most distinctive of these ranges. South of the Hukawng valley is a mass of broken hill country known as the Jade Mines tract, which lies more or less at right angles to the ranges described above, and abuts in the west on the upper reaches of the Chindwin. On the western side of the last-named river, at and below this point, are the Nāgā and Manipur Hills, with peaks running up to a level of over 12,000 feet. This lofty rampart follows the course of the Chindwin southwards, and constitutes the western frontier of Upper Burma. Between the 22nd and 24th parallels of latitude the western highland border is known as the Chin Hills; farther south it is the home of the inhabitants of the Arakan and Pakokku Hill Tracts, while its ever-dwindling southern spur that skirts the Bay of Bengal and ends at Cape Negrais goes by the name of the ARAKAN YOMA. Two of the highest points in this system are Sarameti (12,557 feet), known to the Burmans as Nwemauktaung, a mountain due east of Kohīmā in Assam, a portion of which lies in Burmese territory; and MOUNT VICTORIA (10,400 feet), a peak in the Pakokku Chin Hills between Paletwa and Pakokku, which is looked upon as possessing great possibilities as a sanitarium. Turning now to the hill systems to the east of the Irrawaddy, we find a succession of mountain chains and plateaux separating the valley of that river from the rocky trough down which its sister stream, the Salween, rushes to the sea. Starting from the extreme north, the eastern Kachin Hills detach themselves from the lofty ridge that rises between the head-waters of the two great rivers and, running in a southerly and south-westerly course, are absorbed into the high ground that is massed to the north of the Northern Shan States and the Ruby Mines District. Thence again southwards, as far as the boundary between Upper and Lower Burma, the Shan plateau stretches its undulations across the country that lies between the two main streams of the Province. In the Northern Shan States the grouping of the hills is broken and irregular, but in the Southern the trend of the ridges north and south is pronounced. Near Toungoo, soon after the Shan Hills have given place to the Karen Hills, the high land to the west of the Salween narrows and, under the name of the Paunglaung range, drops away eventually to the level of the Thaton plain, a little to the east of where the big-mouthed Sittang river empties itself into the Gulf of Martaban. On the farther side of the Salween lie the rugged heights peopled by the Was in the north,

and farther south the hills that form the Salween-Mekong watershed in the trans-Salween State of Kengtung. As the confines of the Lao States are reached, a mass of hills curves round the southern edge of Kengtung along the Siam border down the east of Karenni, sending out southern spurs which stretch along the marches of Amherst, Tavoy, and Mergui, in the Tenasserim Division, to the extreme southerly limit of Burma. In addition to the hills on the western and eastern skirts of the Province, a few isolated ranges call for notice. One of these is the PEGU YOMA, which, rising in Yamethin District and running southwards, separates the valleys of the Irrawaddy and the Sittang, and branches out near the head of the Irrawaddy delta into several low terminal hills, the extremity of one being crowned by the Holy of Holies of Burmese Buddhism, the Shwedagon pagoda of Rangoon. The main central plain of Burma, formed by the Districts of the dry zone, is for the most part destitute of rising ground. Here and there, however, isolated hill clusters rise from the surrounding level; and in the centre of the plain, like a boss on a shield, stands the volcanic peak of POPA, its summit nearly 5,000 feet above the sea.

The general course of the rivers of Burma, like that of its hill ranges, is from north to south. The IRRAWADDY traverses the greater part of the Province from end to end, dividing Burma proper into two strips of about equal area. Formed by the junction of the Malikha and the N'maikha, about 30 miles above the town of Myitkyinā, it emerges from a labyrinth of hills in the extreme north, and flows for 900 miles through rocky defiles, broad level plains, and narrow tidal creeks, to empty itself through a multiplicity of mouths into the Bay of Bengal between Rangoon and Cape Negrais. Its principal tributaries are the Mogaung stream, the TAPING, the SHWELI, the MYITNGE, the Mu, the CHINDWIN, the Yaw, the Mon, and the Man.

The next most important river of Burma is the SALWEEN or Nam Kong, which, lying to the east of the Irrawaddy, flows, like its sister stream, generally from north to south. So far as is at present known, its springs are situated at about the 32nd or 33rd parallel of latitude in the unexplored country east of Tibet. When it is level with Hkamti Long, i.e. at about the 27th parallel of latitude, only a comparatively narrow watershed separates its channel from that of the N'maikha. It is not, however, till it has penetrated about three degrees farther south, and has reached a point between 600 and 700 miles from its mouth, that it enters British territory. Thence southwards, ploughing between steep hills, it bisects the Shan States and Karenni, skirts the eastern edge of the Province, and disgorges itself into the Gulf of Martaban near Moulmein.

About midway between the valleys of the Irrawaddy and the Salween and flowing, like these streams, from the north to the south, is the

SITTANG. The valley lying between the Pegu Yoma and the Shan Hills in Yamethin District is the area within which the head-waters of the Sittang or Paunglaung join and begin their journey southwards to the sea. Fed by affluents from the Yoma on the one hand and from the Karen Hills on the other, it winds past the towns of Toungoo and Shwegyin and spreads out, almost imperceptibly, after a course of about 350 miles, into the northern apex of the Gulf of Martaban at a point about equidistant from the ports of Rangoon and Moulmein.

Rangoon itself lies at the junction of three minor streams—the Hlaing or RANGOON RIVER, which flows down, followed by the line of the Prome railway, from the north-west, the Pazundaung creek from the north, and the PEGU RIVER from the north-east. Various streams rise in the hills along the coast of Burma, run south, and empty themselves, after a course of greater or less length, into the sea. Of these, the most important are the KALADAN in Arakan, which, rising in the remote fastnesses of the Chin Hills, flows southwards into the Bay of Bengal at Akyab; the Tavoy river, on which the town of Tavoy stands; and the Tenasserim, farther down the coast, in the extreme south of the Division of that name. The Mekong can hardly be said to constitute any part of the river system of Burma. For a distance of between 50 and 100 miles it does, however, form the boundary between the Shan States and French Indo-China, and therefore deserves mention. Of its affluents the principal one in this region is the Nam Lwi, which traverses the greater part of the Shan State of Kengtung and joins the Mekong from the west.

Jhīls, or shallow meres, caused by the accumulation of river or rain-water in low-lying levels, and drying up either wholly or partially before the close of the hot season, are common in every District of Burma. The greater part of the fishing industry of the interior and the bulk of the hot-season tillage is carried on in the beds of these natural reservoirs, but their transitory nature is such as to deprive them of a title to geographical recognition. There are but few considerable stretches of water which attain any depth that have not been largely converted by May into paddy-fields. The INDAWGYI LAKE, in the west of Myitkyinā District, is the largest of the few real lakes in Burma. It measures 16 by 6 miles, and is bounded on the south, east, and west by two low ranges of hills. The Meiktila Lake, near the town of Meiktila, is artificial. The Inle Lake, near Yawnghwe in the Southern Shan States, is nearly as large as the Indawgyi, but has greatly diminished in size within recent times. A similar shrinkage is apparent in the case of some lakes at Möngnai in the Shan States. The Inma in Prome District, the Tu in Henzada, and the Inyegyi in Bassein are the three most conspicuous of the inland waters of Lower Burma.

Islands are plentiful all down the shores of Burma. The largest is RAMREE, off the coast of Arakan. It is about 50 miles in length and at its broadest point about 20 miles in breadth; and the town of Kyaukpyu, the head-quarters of the District of the same name, lies at its northern end. Separated from it to the south by a narrow strait lies CHEDUBA, another considerable island, with an area of 220 square miles. A straight line drawn from the Alguada lighthouse to the northern end of the Andaman Islands passes through the Cocos, two small islands lying to the north-east of the Andamans and forming, administratively, part of the Hanthawaddy District of Lower Burma. They are not inhabited by any permanent residents, and are only visited occasionally by coco-nut gatherers. The island of BILUGYUN is situated south-west of the town of Moulmein at the mouth of the Salween. It is 190 square miles in extent, and is thickly inhabited. South of Tavoy the MERGUI ARCHIPELAGO stretches along the western face of the Tenasserim Division. The islands of this group are rocky and sparsely populated. Tavoy, King, Sullivan's, Elphinstone, Ross, Kisseraing, and Domel Islands are all of considerable extent, and are all more or less frequented by the Salons or sea-gipsies.

The Province boasts of few good natural harbours. With three exceptions (Akyab, Kyaukpyu, and Mergui), the principal ports are situated on tidal rivers at some little distance from the sea, and none of the harbours on the sea-face is exceptionally commodious or easy of approach.

A line drawn along the western bank of the Irrawaddy as far south as Mandalay, and thence southwards again, along the foot of the Shan plateau, down the Sittang valley to the head of the Gulf of Martaban, may be said to divide Burma into its two main geological divisions. West of this line the formations are of Tertiary age; east of it they are far older, for the most part Archaean and Secondary, any Tertiary patches being purely local. From a geological point of view the most important mountain ranges to the west are the Chin Hills and Arakan Yoma, which are composed partly of sandstones, shales, and limestones, probably of Cretaceous age, but for the most part of rocks containing Tertiary fossils extending from the Nummulitic to the Miocene period; and the Pegu Yoma, consisting of shales and sandstones of more recent formation than those of the Arakan Yoma, which overlie, apparently conformably, the Nummulitics on the eastern slopes of the latter range. The oldest-known formations in the western division are the Chin shales found in the central parts of the Arakan Yoma. According to Mr. Theobald (who has given them the name of Axials), they are of Triassic (Secondary) age, but doubt has been thrown upon the correctness of this classification. A more widely spread formation in this western area is the Nummulitic division, con-

sisting of shales and sandstones capped by a bed of limestone, which is shallow in Lower Burma but increases in thickness towards the north, and is of very considerable depth in the neighbourhood of the Chin Hills in Upper Burma. The petroleum of the Province is found in the still younger sandstones of what is known as the Pegu (geological) division. Coal and amber are present in the beds of this division, which contain a large proportion of the mineral wealth of the Province. These beds are of marine origin, but are overlaid by fluviatile layers of soft yellow sandstone (Miocene), containing concretions of exceedingly hard siliceous sandstone and subordinate bands of ferruginous conglomerate, which cover a very large portion of the valleys of the Irrawaddy and the Chindwin. Volcanic activity during the deposition of the Tertiary formations in Upper Burma is responsible for the presence of jade and gold in the northern portions of the Province.

In the main eastern division, the hilly country to the east of the Irrawaddy-Sittang valley (comprising the Ruby Mines District, the Shan States, and the Karen Hills) is almost entirely composed of rocks older than Tertiary, ranging from the Primary gneisses of pre-Cambrian age to mesozoic (Jurassic or Cretaceous). The gneisses of the Ruby Mines District contain bands of crystalline limestone, in which rubies, sapphires, and spinels occur. In the Northern Shan States, which have been more thoroughly studied than most of Upper Burma, the gneisses are followed southwards by a considerable thickness of mica schists, and dikes of tourmaline granite occur near their junction. In this area the formations have been found to belong to the Devonian, the Silurian, and Cambrian systems of geological sequence. The lowest beds consist of quartzites, greywackes, and slaty shales, above which are Silurian strata composed of limestones, calcareous sandstones, and shales exceedingly rich in fossils. In certain localities beds of sandstone and conglomerates are found. The surface of the Shan plateau is a great thickness of limestone (Maymyo limestone), which extends from near Maymyo to the Salween. This limestone is generally greatly crushed and brecciated, and the fossils it contained have for the most part been destroyed; but there is reason to believe that it includes beds of carboniferous as well as of Devonian age. In several different localities on the surface of the plateau beds of shale are found containing numerous fossils, the relation of which to the Maymyo limestone has not yet been clearly made out. To the east of Hsīpaw a series of red sandstones with subordinate bands of limestone is largely developed, folded or faulted in among the Maymyo limestone. North and south of Lashio are beds containing thick seams of lignitic coal. In the Southern Shan States a great series of limestones, probably representing the Maymyo limestone, has been found. Farther south again in the Paunglaung range, east of the Sittang, the hills are composed chiefly

of crystalline gneissic rocks. The hills separating Amherst, Tavoy, and Mergui from the Siamese border appear to be a prolongation of the Paunglaung and neighbouring ranges. They consist of palaeozoic beds belonging to what have been termed the Moulmein and Mergui groups, and of gneissic rocks. It is in these that the tin-bearing areas of the Province occur[1].

The coast of Burma shows the usual mangrove forest vegetation prevalent along most tropical shores. Farther inland the mangrove pass into tidal forests, where scrubby vegetation is prominent and climbers abound. The herbage here consists of a few coarse sedges and grasses. In the moist climate of Tenasserim, on the lower levels, typical evergreen tropical forests are found, with shrubby vegetation largely developed, and abounding in climbers. At higher elevations oaks, chestnuts, and rhododendrons occur, the soil is covered with grass and herbs, and gentians, lobelias, umbellifers, and violets are met with, while epiphytic orchids and mosses and lichens clothe the trees. Along the eastern base of the Pegu Yoma the vegetation is of the nature of open tropical forest, but the Yoma itself is clad with deciduous forest, bare of leaves in the hot season. Bamboos here, as elsewhere, are abundant; climbers are not uncommon; but orchids and other epiphytes are somewhat scarce. The Irrawaddy valley in Lower Burma shows a mixed forest and vegetation towards the Pegu and Arakan Yoma; climbers and bamboos are common, and orchids not infrequent. Near the river the forest merges into a savannah land of coarse grasses, with here and there swamp forests. In the dry climate of Upper Burma a characteristic scrubby desert flora prevails. Bordering the western flanks of the Shan Hills is the usual typical *tarai* jungle, while at a higher elevation the uplands are covered with evergreen forest, which, at an elevation of about 4,000 feet, merges into an open rolling plateau with a temperate vegetation of such forms as *Ranunculus*, *Viola*, and *Polygala*[2].

Most of the larger animals that have their habitat in India are found also in Burma. In the jungles of the north, and in portions of Lower Burma, elephants are fairly plentiful. Tigers abound, save in the Districts of the dry zone, where there is barely sufficient cover for them. Leopards are common everywhere, and make their presence felt far more than do their larger congeners. The rhinoceros is at times found in the swampy levels of both the Upper and the Lower province, and in the extreme south tapirs have been occasionally seen and shot. It is doubtful whether the wild buffaloes that are at times met with are really indigenous, or whether they are merely beasts, or the progeny of beasts,

[1] The material from which the geological paragraphs have been compiled was furnished by Messrs. La Touche and Datta of the Geological Survey.

[2] The botanical paragraph has been prepared from materials for which the Editor is indebted to Major Prain, I.M.S., Director of the Botanical Survey.

that have strayed from their herds and become wild within recent years. The *hsaing*, *tsine*, or *banteng* (*Bos sondaicus*), is not found in India proper. Bison can be obtained in the remoter parts of the forests. The deer family is represented by the *sāmbar*, the hog deer, the *thamin* or brow-antlered deer (*Cervus eldi*), and the barking-deer. Several varieties of monkey are indigenous to the country, and gibbons (*Hylobates hoolock*) make the forests re-echo with their yelping, which is very like the music of a pack of fox-hounds giving tongue. The orang-outang is said to have been seen in the portions of Tenasserim adjoining the Malay Peninsula. Among birds, the peafowl (which differs from the Indian bird), the pelican, the vulture, and the hornbill may be mentioned. Partridge and pheasants of different kinds are distributed over the Province, and every considerable stretch of jungle swarms with jungle-fowl. The *sāras* crane is frequently seen among the paddy-fields, and in the cold season the country is visited by myriads of ducks, geese, snipe, and teal. The cobra, the Russell's viper, and the *Bungarus* (or *karait*) all infest Burma, and in some localities the hamadryad has been met with. Pythons are common and at times attain enormous dimensions. The best-known fish are the hilsa (*Clupea ilisha*), the mango-fish (*Polynemus paradiseus*), and the mahseer. Crocodiles and turtle are found in the greatest numbers in the delta of the Irrawaddy, but are not uncommon elsewhere. Porpoises are occasionally seen in the upper reaches of the Irrawaddy and the Chindwin.

Burma has long enjoyed an unenviable notoriety in the matter of climate, but is slowly outgrowing its reputation as an irredeemably pestilential region. Malarial fevers are very prevalent in certain localities, and the Province still possesses towns, such as Kyaukpyu and Kengtung, which are deplorably unhealthy; but jungle-clearing and conservancy have worked wonders in the past few years in reducing the tale of these penal settlements, and now, whatever may be said of the jungle areas, the majority of places inhabited by Europeans are as salubrious as average stations in the East. For the greater part of the year Lower Burma is a most relaxing place of sojourn, but it is by no means as deadly as it is often supposed to be; and the dry zone of Upper Burma is, except for a few weeks in the spring and autumn, neither overpoweringly hot nor remarkably unhealthy. Life in Burma is often, it is true, a burden to the enervated foreign resident, but his bodily discomfort has but little connexion with his state of health, as gauged by the bills of mortality; for the close, steamy days of the early monsoon are not so dangerous as the cooler, but more treacherous, period that ushers in the cold season, and March and April, two of the most burdensome months of the twelve in the dry Districts, are nevertheless among the healthiest.

Generally speaking, the rainy season may be said to commence with the third week in May and end with the third week in October. In the

wet Districts the rainfall of May and September, though high, is rather lower than that of June, July, and August; and July is ordinarily, it may almost be said invariably, the wettest month in the year. In the dry zone, on the contrary, the beginning and end of the wet season give, as a rule, the heaviest rainfall. July and August in this area are marked by strong, steady winds almost devoid of moisture, and it is only when these drop that showers occur to any extent. In Upper Burma the beginning of October is sometimes very wet, but by the end of the month the dry season has set in. The period between November and April forms the dry moiety of the year, when rain is the exception not the rule. The first half of this period is known as the cold season; the second as the hot season. December and January are, even in Lower Burma, moderately cool. In Upper Burma the three months from the middle of November to the middle of February are uniformly pleasant. From the latter date there is a marked rise of the thermometer till, shortly after the end of April, the temperature is sent down by the first showers of the monsoon period.

The average temperature and rainfall of the Province are shown in Tables I and II at the end of this article (p. 234). The mean and the diurnal range of four representative months are there given for six typical plains stations and for Maymyo, a hill station on the edge of the dry zone of Upper Burma. Perhaps the most noticeable feature of the figures is the relative variation in these monthly means. In Mergui the highest monthly average shown in the table is less than 4° higher than the lowest, and in Rangoon less than 8°, whereas in Bhamo the January and May means are separated by over 20°, and in Thayetmyo and Mandalay by over 18°. Where the rainfall is heavy (i. e. exceeds 60 inches per annum) the average maximum summer temperature in Burma seldom rises much above 94°; where it is light, the corresponding figure may be put roughly ten degrees higher, namely, at 104°. The minima are less affected by rainfall than the maxima; hence, in the cold season, latitude rather than moisture is the determining factor. Speaking generally, we may take 60° as the level below which the temperature of Lower Burma seldom falls, while for Upper Burma the figure must be placed about ten degrees lower. The extremes of temperature are thus found in Upper Burma, where the range is about 20° greater than in Lower Burma.

Table II (p. 234) indicates the striking disparity of the rainfall in different portions of Burma, and shows the distribution of the rain over the months of the year. In the natural divisions of Burma referred to above the average annual rainfall is roughly as follows: in the Upper Burma wet division, 70 inches; in the Upper Burma dry division, 37 inches; in the Lower Burma littoral, 180 inches; and in the Lower Burma sub-deltaic, 62 inches. The Upper Burma divisions present little

variation in the rainfall of their component Districts. In the Lower Burma littoral division, however, the average ranges from 200 inches in Tavoy and Sandoway to 97 in Rangoon, the figure for the latter area being little more than half of the divisional average, while in the sub-deltaic division the mean lies between Henzada, with nearly 90 inches, and Thayetmyo, with very little over 30.

Storms at the head of the Bay of Bengal are rarely felt south of 20° N., and then only in the immediate neighbourhood of the Arakan coast. Storms and cyclones in the Bay near Burma generally occur during the rainy season. They are of most frequent occurrence during May, though records show that April and November are not free from severe climatic disturbances. Of the May storms those of 1884, 1890, 1897, 1899, and 1902 may be mentioned. The last did much damage in Rangoon and its immediate neighbourhood. Frequent squalls occur during the south-west monsoon. Those near the Arakan coast are apparently due to the obstructive action of the Arakan Yoma, which is from 1,000 to 4,000 feet in height and diverts the direction of the monsoon currents.

Earthquakes of note have occurred only twice in recent years. On October 10, 1888, a fairly severe shock was felt in Rangoon, which wrecked the vane on the top of the great Shwedagon Pagoda. On the 13th and 14th of December, 1894, a series of severe shocks again occurred in Rangoon and its neighbourhood. Considerable damage was done to buildings in the city, but there was no loss of life.

Destructive floods on a large scale are unknown in Burma. Where, as for instance in the Irrawaddy delta, inundation might result in serious damage, most of the low-lying tracts exposed to this danger are fully protected by an elaborate system of embankments. Outside these specially guarded areas the rise of the waters at flood-time is so well-known, and can be so accurately gauged, that it is quite the exception for loss of life or property (other than growing rice) to occur even in the highest floods.

History.

Burmese history, as recorded by indigenous chroniclers, goes back to an exceedingly remote period, and its earlier chapters deal with events that are for the most part obviously legendary, but of interest in so far as they afford a clue to the distribution over the country of the various races that claim Burma as their home. It is impossible to place a finger on the precise point at which fact begins to emerge from fable. Our present knowledge of the people of the country enables us to dismiss as wholly fabulous the story that the first princes of Burma came from Benares. It is clear, however, that the Burmans, in their progress down from their northern prehistoric home in Central Asia, first established themselves as a political entity in the country round the northern reaches of the Irrawaddy. Their

earliest-known capital was Tagaung, a town on the left bank of the river, in what is now the Ruby Mines District of Upper Burma. It may be necessary to accept with some reserve the statement, put forward by the early Burmese historians, that a dynasty was founded here at the beginning of the tenth century B.C.; but that this settlement took place at a very early era is clearly indicated by the story of a branch which, after the foundation of Tagaung, spread westward, first into the Chindwin valley and next into the vicinity of the Kaladan river in NORTHERN ARAKAN. This migration can have been nothing more or less than the diversion to the western coast lands of the peoples who subsequently became the Arakanese, and who in all probability separated from the Burmans during the early centuries of the Christian era. Subsequent movements of parties into the Shan States and down the Irrawaddy, alluded to in these early annals, point to a possible solution of the problems connected with the origin of the Taungyos and Inthas, and conceivably of other Tibeto-Burman hill tribes now resident on the confines of the Province. It was during this early legendary period that a section of the primitive Burmese community, forsaking the main body, pressed southward and founded, in the borderland between the dry and wet zones of the country, the dynasty of the Pyus at PROME, which for many years was the centre of Burmese tradition.

From very early days the southern portion of what is now Burma was in the hands of the TALAINGS or Peguans. The Talaings are representatives of an even earlier immigration wave than the Burmans, namely, the Mon-Anam; and it seems possible that their political beginnings, which had THATON as their earliest centre, were almost as early as those of the Burmans, though their chronicles do not profess to go back so far. War between the different races of the country was a common feature of their history. In 104 B.E. (A.D. 742) Prome was destroyed by the Talaings, and a new Burmese kingdom was established at PAGAN, which for five hundred years was the head-quarters of Burmese rule. From the eleventh to the thirteenth century the old Burmese empire was at the height of its power, and to this period belongs the greater part of the architecture which still survives in the shape of picturesque ruins on the site of the ancient capital, Pagan. The most famous of its rulers was Anawrata, who invaded and conquered the Talaing kingdom in the south, brought from Thaton a copy of the Buddhist Scriptures, and revived (if he did not first establish) Buddhism in what is now Upper Burma. One of his successors, Narathu or Kalākyamin ('the king overthrown by the *kalās*' or foreigners), is said to have been slain by assassins. The Pagan dynasty came to an end at the close of the thirteenth century, after the country had been devastated by a Chinese-Shan invasion, Narathihapade, the monarch reigning at the time, being still known as Tayokpyemin, 'the

king who fled from the Chinese[1].' The Burmese hold over Pegu and Arakan (which appears to have acknowledged the suzerainty of Pagan) was lost, a succession of Shans and quasi-Shans obtained the upper hand, a number of independent principalities with capitals at Pinya, Sagaing, and elsewhere came into existence, and no conspicuous Burmese house held sway till the early part of the sixteenth century, when the rulers of the dynasty of TOUNGOO in the south began to assert themselves. The Toungoo kings, of whom Tabinshweti and Bayinnaung are the most famous, made themselves masters of the Talaing kingdom, took Pegu as their capital, obtained temporary possession of Arakan, and subjugated the Burmese country of AVA. It was in the days of the Toungoo dynasty that European countries first entered into commercial relations with Burma. In 1619 the Portuguese signed a treaty with the Burmese king of Pegu, and established factories at Syriam and Martaban (practically the present-day Rangoon and Moulmein). The close of the sixteenth century found the Dutch in possession of the island of Negrais, off the coast of the present Bassein District; and early in the seventeenth century the English East India Company established agencies and factories at Syriam and Prome as well as at Ava, which had been founded in 1364 by Thadominpayā, and had by that time become the political centre of the Burmese (Toungoo) kingdom. During the rest of the seventeenth century the British were strengthening their commercial position in the country. Towards the middle of the eighteenth century the Talaings of the south revolted, shook off the Burmese yoke, and turned the tables on their late conquerors by laying siege to and burning Ava. The supremacy thus passed into the hands of the Peguans, and it was from the dominion of this Mon dynasty that the Burmans were rescued by their great king Alaungpayā.

The opening years of the second half of the eighteenth century saw two reigning houses established in what is now Burma proper, the Arakanese to the west of the Arakan Yoma and the Peguan to the east. The various states that had gone to make up the Burmese empire had been amalgamated into one and had been recently brought under the Talaing yoke. Born in Shwebo, and originally the headman of a small town in that District, Alaungpayā, or, as he was originally called, Aung Zeya, commenced, in 1752, his career of revolt against the foreign conquerors; and between this date and 1760, when he died on his return from an inroad into Siam, he had succeeded in driving the Talaings out of Ava, and, carrying the war into the enemy's country, had re-established the Burmese power in the whole of the southern as well as the northern portion of the Province, and had invaded both Manipur and Siam. The town of RANGOON may be said to have had

[1] *See* MYINGYAN DISTRICT.

its real beginning in Alaungpayā's reign. It was founded in 1755 to commemorate the conquest of the Talaings, and, as a token of the termination of hostilities, received its existing name, which means, 'the finish of the war.' Trade was not immediately attracted to the new city of peace. Commercial interests centred round Syriam, a town close to Rangoon but separated from it by the Pegu river; and during the struggle between the Burmans and the Talaings the British and French merchants at this station found considerable difficulty in adjusting their policy to the varying fortunes of war. When victory had finally declared for the Burmans, Alaungpayā emphasized his position by putting to the sword the French traders, who had on the whole been better disposed towards the Peguans than towards their opponents. The British, on the other hand, obtained increased facilities for commerce, but their evil day was deferred for a while only, for, in 1759, they in their turn were massacred at Negrais; the factories they had established were demolished; and it was not till the reign of Alaungpayā's successor that trading rights were restored to the foreigners by the Burmese king.

This monarch was Naungdawgyi, Alaungpayā's eldest son, who reigned from 1760 to 1764, and was succeeded by his brother Sinbyushin (1764–76). The latter invaded Siam and Manipur, added a portion of the Shan States to the Burmese kingdom, and successfully repelled two Chinese invasions. On his death the throne was occupied by his son, Singu Min, during whose reign Siam passed finally out of the hands of the Burmans. Singu Min died a violent death and was succeeded in 1781 by his cousin, Maung Maung, a son of Naungdawgyi; but this prince reigned for a few days only and was then put to death by his uncle, Bodawpayā, fifth son of the great Alaungpayā. Under the new ruler Burma was extended to what are practically its existing limits by the final subjugation of the Arakanese kingdom (1784), the cession of the Kubo valley, as the result of an invasion of Manipur, and a peace concluded with Siam in 1793, which left the Burmans in possession of the coast of Tenasserim and the ports of Tavoy and Mergui. In 1783 the capital was moved from Ava to AMARAPURA.

By the conquest of Arakan the Burmans were brought into direct political contact with the British Government. Disputes arose with Calcutta regarding the extradition of Arakanese fugitives. They were, however, temporarily settled in 1794. In 1795 the Government of India dispatched an envoy (Captain Symes) to Burma, to strengthen commercial and political relations with the court of Amarapura. Little came, however, of this and of subsequent missions, and a representative who was sent to Amarapura in 1796 was forced by a succession of indignities to withdraw two years later. In 1819 Bodawpayā died and his grandson, Bagyidaw, succeeded. In 1822 Assam was overrun and declared a Burmese province, but this annexation added the last of its

jewels to the Burmese crown. Aggressions from the newly acquired provinces of Arakan and Assam into British territory provoked hostilities with the Indian authorities, and in 1824 the British Government formally declared war against Burma. Operations were conducted on a limited scale on the Assam border; but the main advance on Ava (to which the seat of the government had been retransferred in 1822) was up the Irrawaddy, the invading body being under the command of General Sir Archibald Campbell. The river was entered May 10, 1824. No serious resistance was offered at Rangoon. The town was invested and the troops were landed there, but no further progress was made towards Ava for several months. The rains, which were then at their height, rendered active operations exceedingly difficult, the troops suffered heavily from sickness, and during the monsoon Sir Archibald Campbell had to satisfy himself with obtaining control of Pegu, Martaban, Tavoy, Mergui, and the Tenasserim coast, and maintaining his position in Rangoon. At the beginning of the cold season active operations recommenced. The redoubtable Burmese Mahā Bandula, or 'commander-in-chief,' a general who had covered himself with glory in the operations against Assam, was recalled from Arakan and sent to the front; and by the end of November an army of 60,000 men under this leader was surrounding the British position at Rangoon and Kemmendine, for the defence of which only 5,000 efficient troops were available. Despite the heavy odds against them the invaders were able to hold their own. A succession of attacks was directed against Kemmendine by a strong body of Burmans; but they were ineffectual, and on December 7 the Burmese general's numerically superior force was completely routed.

Early in 1825 operations in Assam had resulted in the capture of all the enemy's posts there and the granting to them of terms which involved their evacuation of the country. Simultaneously with these operations, an expedition was dispatched from Chittagong into Arakan under General Morrison. Myohaung, the capital, was occupied on April 1, and the subjugation of the rest of the province was easy. By the beginning of 1825, practically all the outlying portions of what is now Lower Burma, including Bassein, were in the hands of the British, and the ground had been prepared for the advance up the Irrawaddy to the Burmese capital. Two columns proceeded from Rangoon northwards in February, 1825, one by land and one by river. The opposing force was entrenched at Danubyu, a town on the western bank of the Irrawaddy, which was attacked on April 1 by the land and river forces and taken after two days' assault, the Mahā Bandula having been previously killed. Prome was occupied by the British three days later, and after an abortive attempt to settle terms had been made at Nyaungbinzeik, offensive operations were resumed. Several skirmishes

followed in the neighbourhood of Prome and a Burmese force of 60,000 men invested the town; but on December 1 they were completely routed and retired to Myede, a town close to what subsequently became the frontier between Upper and Lower Burma. Driven out of Myede, they made another stand at Malun, and here they were allowed to stop while a further attempt was made to come to terms. Meanwhile a British force had moved from Pegu into the valley of the Sittang, and by the middle of January, 1826, had reduced the most important posts in that region. The Malun negotiations proved ineffectual; the Burmans were pressed back on Pagan, whence they were driven on February 9; and the British advanced to Yandabo, four marches south-west of Ava. Here at length the Burmans accepted the terms already offered to them, which involved the cession of the provinces of Arakan and Tenasserim, the abandonment of claims upon Assam and the small States in its vicinity, and the payment of a war indemnity, and also provided for the appointment of Political Agents and other matters. This concluded what is known as the first Burmese War.

The removal of the British troops from Pegu on the cessation of hostilities encouraged the Peguans to make a final effort to shake off the Burmese yoke. At the beginning of 1827 they revolted under the Talaing governor of Syriam, but were defeated and have never since attempted to regain their independence. There was considerable delay before the Burmans could be prevailed upon to comply with all the conditions of the Treaty of Yandabo, notably in connexion with the payment of the war indemnity, and the patience of the Residents sent to the court of Ava in the years immediately following the war was tried to the utmost. The first Resident was accredited in 1830, but it was not till two years later that the final instalment of the indemnity was paid.

In 1837 the king of Ava (Bagyidaw), who had for several years been insane, was deposed by his brother Tharrawaddy, who took Amarapura for his capital. This monarch's attitude towards the British was even less conciliatory than that of his predecessor; the relations between the two Governments became more and more strained; and in 1839 the British Resident was withdrawn and no further attempt was made to maintain friendly political intercourse with the Burmese court. Tharrawaddy's reign lasted till 1846. Towards the end of his life he, like his brother, became gradually insane and his last years were spent in confinement. On his death his son, Pagan Min, was proclaimed king, but the new ruler did nothing to bridge over the differences between the British Government and Independent Burma: in fact he widened the breach, and in 1851 matters were brought to a head by the illegal arrest and punishment in Rangoon of the masters of two British merchant vessels. The steps taken to redress the grievances complained of by the British Government were an empty show, and the warlike

preparations made by the court of Amarapura left no course open to the Governor-General but to take severe measures.

Hostilities commenced with the bombardment of the Rangoon stockades by a British man-of-war; and as this operation had no effect on the Burmans, a land force was dispatched under General Godwin. The capture of Martaban on April 5, 1852, was the first incident of note in this second Burmese War, and was followed a week later by the occupation of Rangoon and the seizure of Bassein. Pegu was taken in June after some sharp fighting. In July operations were conducted on the Irrawaddy by a small squadron of steamers, and the enemy suffered a series of reverses off Prome and elsewhere on the river. On September 27 an advance was made on Prome in force, and the town was captured on October 12, after a feeble resistance. Shortly after this it was found necessary to retake Pegu, which, after its capture earlier in the year, had been left in charge of the Talaings and had been lost by them to the Burmans. The town was regained; but the little garrison left behind when the main body of troops returned to Rangoon was before long beleaguered by the enemy, and its relief was not effected till a considerable force had been sent. Towards the end of 1852 the hold of the British over the province of Pegu was so complete that a proclamation annexing it was issued and a treaty providing for its cession was prepared. This latter document was, however, never ratified. King Pagan Min was dethroned at the beginning of 1853 by his half-brother, Mindon Min; and as the new ruler would have nothing to do with the treaty, measures were taken for the occupation of the whole Pegu province, which passed to the British without formal cession.

The pacification of the new province and its reduction to order was a long and troublesome undertaking; but eventually, in 1862, the British possessions in Burma, Arakan, Pegu, Martaban, and Tenasserim were amalgamated and formed into the Province of British Burma under a Chief Commissioner, the first ruler of the combined Province being Lieutenant-Colonel (afterwards Sir Arthur) Phayre.

In 1857 the Burmese capital was moved from Amarapura to Mandalay. The history of the succeeding few years is mainly a record of diplomatic moves and countermoves made in connexion with the attempt to establish fair commercial relations between British and Independent Burma. In 1862 a treaty was signed which opened the Irrawaddy to trade; and, to encourage commercial relations, the British agreed to forgo lucrative customs duties levied in the past on the frontier. The Burmans, however, failed to fulfil adequately their share of the stipulations, and in 1867 a second treaty was found necessary. This reaffirmed the previous agreement, and, among other matters, put a limit on the creation by the Burmese king of some objectionable monopolies, which severely handicapped trade in his dominions. But

Mindon Min found means for eluding the provisions of this treaty also; and, what with the evasion of their obligations and their treatment of British subjects, the Burmans had succeeded by 1878 in making the relations between Mandalay and Rangoon very strained. This was the last year of Mindon Min's reign, a period which, but for a revolt in 1866 involving the murder of the heir-apparent by two princes of the blood royal, was one of comparative internal tranquillity. In 1868 and 1874 expeditions were sent by the British into south-west China with a view to improving the trade between China and Burma. One of the members of the second expedition, Mr. Margary, was murdered by the Chinese, and the party was forced to return without having effected its object.

When Mindon Min died and his son Thībaw succeeded him, it was hoped that the new ruler's reign would inaugurate happier relations with the British Government, but a very short time sufficed to show that this hope was vain. A few months after his accession Thībaw displayed his character by a general massacre of the numerous direct descendants of his predecessor, and made it clear that there was to be no change for the better. The Resident at Mandalay protested strongly against the murder of the princes and princesses, and tried to obtain the release of the few survivors who were in custody; but his good offices were rejected, and in October, 1879, political relations with the Burmese court were broken off. The second edition of the *Imperial Gazetteer* sums up the situation, as it existed when the volume dealing with Burma went to the press, in the following words:—

'In spite of various disquieting rumours, no breach of peaceful relations between the British and Burmese Governments has yet occurred; and although no British Resident is stationed at Mandalay, direct communication has been maintained with the Ava court.'

The storm did not burst till 1885. That the blow did not fall earlier was due in a great measure to the foreign complications which were engaging the attention of the British Government during the first half of the six years of Thībaw's reign, and which rendered expedient an attitude of extreme forbearance towards that ill-advised monarch. In 1880 and 1882 pretences to enter into negotiations with the British were made by the Burmese court; and in 1883 Thībaw sent a mission to Europe which visited a number of the important countries and cities of the Continent, ostensibly with a view to studying Western industrial methods, but in reality to establish with France precisely those friendly relations which his action had rendered impossible with Great Britain. From 1882 to 1884 there was considerable friction in connexion with the demarcation of the Manipur-Burma frontier, and later on other causes for complaint arose. These culminated in the imposition by the Hlutdaw, or High Court of Mandalay, of a fine of 23 lakhs, on an

alleged charge of fraud, upon the Bombay Burma Trading Corporation, a British company which had obtained the right of extracting timber from the forests of Upper Burma. A request made by the Chief Commissioner of British Burma that the questions at issue between the corporation and the Burmese officials should be fairly and exhaustively investigated by an impartial tribunal was flatly rejected, and there was nothing left for the British Government but to send Thībaw an ultimatum which aimed at a settlement, once and for all, of all the main matters in dispute between the two Governments. The reply to this ultimatum, which was eminently evasive and unsatisfactory, was followed by a proclamation issued by Thībaw to his subjects, intimating that armed force was to be opposed to any attempt made by the British to enforce their demands. On November 11, 1885, instructions to advance on Mandalay were telegraphed from England, and hostilities commenced without further delay.

An advance was made up the river by a fleet of river steamers under General Prendergast; and the brick fort at Minhla, the first station of importance north of the frontier, was attacked and taken after a sharp action, the fort on the opposite bank of the river being evacuated without resistance. Nyaungu (Pagan) and Myingyan farther up the river were occupied without serious opposition, and some little way above the latter town envoys met the expeditionary force with offers of terms. They were informed that a complete surrender of the capital and troops was a condition precedent to further negotiations; and, pending the receipt of an intimation that this stipulation was accepted, the fleet pushed on towards Mandalay. A reply to the British demands was not obtained till a point on the river between Ava and Sagaing had been reached and the troops were on the eve of attacking the former post; but when received it was found that it amounted to an unconditional surrender, and after the Burmese troops at Ava and Sagaing had laid down their arms, a move was made on Mandalay, which was reached on November 28, 1885. No opposition was offered to the landing of the troops, the palace was reached and surrounded, and on the following morning king Thībaw surrendered to General Prendergast. He was immediately conveyed to Rangoon, and from thence to India; and he now resides as a state prisoner at Ratnāgiri on the Bombay coast, receiving an allowance from the British Government.

After the occupation of Mandalay a provisional administration was constituted; and before the close of the year Mr. (the late Sir Charles) Bernard, Chief Commissioner of Lower Burma, arrived from Rangoon and assumed charge of the civil administration in Upper Burma also. On January 1, 1886, a proclamation was issued declaring Upper Burma to be part of Her Majesty's dominions. From that date the energies of its responsible rulers were concentrated on the task of pacifying the new

territory, which was administratively attached to Lower Burma. For the first five years this work was excessively laborious. The resistance offered was nowhere organized and formidable; the majority of the people acquiesced without a murmur in the new order of things; but everywhere, in Lower as well as in Upper Burma, rebels swarmed in small bands over the face of the country, rarely venturing into the open, and trusting for success to the unhealthiness of their jungle refuges not less than to their mobility and intimate local knowledge of the ground. Against guerrillas of this type regular troops were of little avail, and special measures had to be taken for coping with the special conditions of resistance. A stringent disarmament policy, and the supersession of regulars by military police, stationed thickly in small posts over the disaffected areas, gradually wore down the undisciplined opposition; the political ends that for a time made heroes of the outlaws dropped out of sight by degrees; and long before the last of the original gangs had been hunted down or broken up, it had been recognized by all that each fresh success of the police meant so many men of bad character accounted for and so many pests to society removed. The most serious rising in Burma proper between the beginning of 1886 and the end of 1891 was a rebellion in Wuntho, a Shan State lying to the west of the Irrawaddy between the Upper Chindwin and Kathā Districts. It broke out early in 1891, but was promptly suppressed with considerable loss to the insurgents; the Sawbwa (chief) took to flight and his territory became part of Kathā District. The crushing of this rising may be looked upon as having dealt the deathblow to organized rebellion in Upper Burma. From time to time since annexation the hill tribes on the frontiers of the Province, notably the Chins on the north-west and the Kachins and Was on the north and north-east, have given trouble, sometimes serious enough to justify the dispatch of expeditions against them; and it would be unsafe to affirm that cause for anxiety no longer exists in the north-eastern regions, and that armed force will never again be necessary. So far, however, as Burma proper is concerned, the establishment of order may be said to have been fully achieved, and the acceptance by the people of the British as their undisputed rulers is now full and unhesitating. The annexation of Upper Burma made the Chief Commissioner at Rangoon Chief Commissioner for Burma as a whole, and in 1897 the growing importance of the enlarged Province led to its development into a Lieutenant-Governorship.

The relations of the Province with Siam and China since the annexation of Upper Burma have been friendly. In 1883 a treaty concerning Chiengmai and the adjacent provinces was concluded with Siam, and in 1892–3 a joint Commission of English and Siamese officers demarcated the frontier between Siam and the trans-Salween Shan States.

Mr. Margary's murder, referred to in an earlier paragraph, was made the subject of negotiations with the Chinese, which ended in an agreement signed at Chefu in 1876. A convention signed at Peking in 1886 provided for the recognition by China of British rule in Burma, and for the delimitation of the frontier between Burma and China. The boundary as far north as latitude 25° 35′ N. was subsequently defined, first by a convention in 1894, and later by a supplementary agreement in 1897; and the demarcation of the greater part of the frontier was effected by a joint Boundary Commission between 1897 and 1900. The demarcation of a portion of the boundary has not yet been finally completed, and in the extreme north the frontier to the east of the N'maikha has not been settled. In 1894-5 negotiations were opened with France for the creation of a buffer state between the British and the French territory; but these fell through, and in 1896 the Mekong was fixed as the boundary line between British and French territory to the east of Kengtung.

Before his death in April, 1890, Dr. Forchhammer, late Government Archaeologist, completed a detailed archaeological survey of Akyab, Myohaung, Launggyet, Minbya, Urittaung, and Sandoway in Arakan, and of the Kyaukku temple at Pagan. Since 1890 archaeological work in Burma has been carried on somewhat spasmodically. No detailed survey of any locality in Burma proper has been executed; but a close study of the inscriptions and native histories has revealed the fact that, as the religion, letters, and civilization of Upper Burma were influenced by Magadha, Nepāl, Tibet, and China, so those of the Talaings of Lower Burma were affected by Ceylon, Southern India, and Cambodia, and that these two streams of influences finally coalesced at Pagan in the eleventh century, when the Burmese king, Anawrata, subverted the Talaing kingdom of Thaton, and led its monarch, Manuha, captive to Pagan together with the learned monks and literary treasures of the conquered race.

Archaeological exploration of the following sites may be expected to yield interesting results: Yazagyo and Myeyin in the Chindwin valley, Tagaung, Prome, Pagan, Ava, Pegu, Toungoo, Thaton, and Taikkala.

Shwebo, Sagaing, Amarapura, and Mandalay are modern sites dating from the middle of the eighteenth century. At these places the wooden architecture, especially that of the Mandalay palace and the royal monasteries, deserves minute study.

Population.

The total population of the Province at the Census of 1901 was 10,490,624. This total includes, besides the residents of those areas where a regular synchronous or non-synchronous enumeration was carried out, the inhabitants of a few of the most backward of the Hill Tracts where the population

could only be estimated. The estimated areas contained a population of 127,011, so that the aggregate of persons regularly treated was 10,363,613. For Burma proper, exclusive of the Shan States and the Chin Hills, the density in 1901 was 55 persons per square mile (49 in rural areas). In 1891 the corresponding figure was 46, and at the Census of 1881 it was 43 for what was then British (or Lower) Burma. Of the four natural divisions of the Province described above, the Lower Burma sub-deltaic is the most thickly populated. Its average is 90 persons per square mile, and one of its Districts (Henzada) shows the highest density of any of the rural Districts in the Province. The Upper Burma dry division comes second in order with 79 persons per square mile, and the Lower Burma littoral division follows with 55. Some of the Lower Burma littoral Districts can boast of a fairly dense population, but the divisional average is reduced by the hill areas of Arakan and Tenasserim, whose dwellers are exceedingly scattered. The Upper Burma wet division is far the least populous of the Province, its average being only 15 persons per square mile. The density for the whole of Burma, including the poorly populated areas which were enumerated for the first time in 1901 as well as Burma proper, is 44 persons per square mile (40 in rural areas).

In all, 989,938 of the persons dealt with at the last Census lived in towns and 9,500,686 in rural areas. Burma contained, in 1901, two cities (Rangoon and Mandalay) with more than 100,000 inhabitants, 19 towns with a population of over 10,000, and 25 with 5,000 and more. The following are the population totals for the principal towns: Rangoon, 234,881; Mandalay, 183,816; Moulmein, 58,446; Akyab, 35,680; Bassein, 31,864; Prome, 27,375; Henzada, 24,756; and Tavoy, 22,371. Villages with more than 500 inhabitants numbered 2,447, and smaller villages 57,948. The Burmese village or hamlet is as a rule a very compact unit. Each house stands in its own separate compound or enclosure, and the whole collection of dwellings is often surrounded by a bamboo fence or a thorn hedge. For administrative purposes the village headman's charge consists ordinarily of several of these hamlets.

In Burma proper (that is, excluding the Shan States and the Chin Hills) the population rose during the ten years 1891 and 1901 from 7,722,053 to 9,252,875, or by 19·8 per cent. As Upper Burma was not dealt with in 1881, it is not possible to make any further comparison of the figures for the whole Province; but in Lower Burma, which has now been British for over fifty years, the figures show that from 1872 to 1881 the rate of increase was 36 per cent., from 1881 to 1891 24·7 per cent., and from 1891 to 1901 21·2 per cent. This large growth is due almost wholly to immigration from outside, which has no real emigration to counterbalance it: there is nothing

to show that the excess of births over deaths within the Province is at all above the normal. The part that immigration plays in the movement of the population is strikingly brought out by the District figures, for without exception the rise is most marked in the rice-producing areas of the delta, which annually attract large numbers of agriculturists from Southern India. Prome, Mandalay, and Thayetmyo alone of the Districts of the Province showed a falling off in population at the Census of 1901, caused by the exodus of the indigenous population to the more fertile areas of the Province, notably to the delta Districts. The rate of increase during the ten years ending 1901 in the Lower Burma sub-deltaic division (of which Thayetmyo and Prome are typical Districts) is only 11 per cent.; that of the Upper Burma dry (in which Mandalay figures) is only 1 per cent. higher; and it is clear that the tendency is not only for the immigrant Indian population to collect in the wetter portions of the Province, but for residents of the less-favoured areas of the dry zone to move to the more prosperous rice-producing tracts. This relinquishment by the indigenous folk of the less fruitful localities of Lower Burma is a phenomenon of comparatively recent growth. There was no hint of any such movement during the years 1881–91, and in the case of Prome and Thayetmyo it cannot be said that the annexation of Upper Burma has helped to bring it about. No tendency exists on the part of the indigenous population to crowd from the rural areas into the towns. The Burman, fond as he is of gaiety and the amenities of cities, is quite incapable of responding to the calls that town life makes upon his energies. In industrial matters he finds it hopeless to compete with the native of India or the Chinaman; and, though precluded by no caste prejudices from taking up fresh occupations, he soon learns that it is in the non-industrial pursuits of the country that he can best hold his own. There is, in fact, among the people of the country an inclination to forsake urban for rural areas. In the six largest towns of the Province, though the number of foreigners, i.e. Hindus and Musalmāns, was in almost every instance considerably higher in 1901 than in 1891, the total number of Buddhists was either lower than, or only slightly above, the earlier figure. In Upper Burma, where the urban population is recruited less from India than in Lower Burma, a surprisingly large number of towns declined in population within the decade preceding the Census of 1901. Mandalay, whose inhabitants have diminished by close upon 5,000 during the period in question, is a case in point, but there are other towns where the falling off is even more marked. During the preceding decade a decrease in the urban population was quite the exception. To a certain extent the diminution of recent years is due to the growing practice of building houses just outside municipal limits in order to

avoid municipal taxation; but this tendency can be held responsible for a portion only of the general decrease, and everything seems to point to the gradual displacement of the Burman in the larger industrial centres and to the concentration of the indigenous folk into the large villages.

There is very little emigration from Burma. Practically all the people who leave are foreign immigrants returning to their homes either temporarily or permanently. The Burman himself rarely moves from the country of his birth. It is probable that at least one-half of the persons indigenous to Burma who were enumerated in India at the Census of 1901 were convicts undergoing terms of transportation in Indian jails.

At the Census of 1891 the mean age of the population was returned as 24·57 years for males and 24·51 for females. In 1901 it was found to be 25·04 for the former, and 24·75 for the latter. Though, judged by European standards, this mean is low, it is not below that of the other Provinces of India. A rise in the mean age, such as is apparent from the above data, is not always a satisfactory feature, but there appear to be good grounds for assuming that in the case of Burma it is not a decline in the birth-rate that has caused the figure to mount. The following figures give the distribution over five main age periods of every 20,000 of the population of the Province in 1891 and 1901:—

	1891.	1901.
0–10 . . .	5,283	5,310
10–15 . . .	2,341	2,131
15–25 . . .	3,758	3,653
25–40 . . .	4,342	4,604
40 and over . .	4,276	4,302
	20,000	20,000

The rise in the lowest age period, in so far as it does not represent greater care devoted to infants during their earliest years, points to a slightly improved birth-rate, while the increase in the highest age period shows that there is no appreciable diminution in longevity.

Municipalities, cantonments, and towns are divided into wards for the purposes of the registration of births and deaths, and the headman appointed for revenue purposes is entrusted with the work of registering domestic occurrences as a portion of his regular duties. He sends his register of births and deaths at regular intervals to the town authorities, who compile monthly returns submitted to the Sanitary Commissioner. In rural areas, the headman of each village or collection of hamlets registers domestic occurrences on a form printed in counterfoil. A police patrol constable visits each village at least once a month, takes away the entries of all events recorded since his

last visit and deposits these documents in the head-quarters station of the patrol, whence they are sent to township officers (subordinate magistrates and revenue officers) for compilation into monthly returns. Each township officer sends such returns to the Civil Surgeon of the District, in whose office a consolidated return for the whole District is made up and submitted to the Sanitary Commissioner. The book of counterfoils is retained by the headman, and is thus available for examination by inspecting officers.

The particulars registered differ slightly in different localities: thus, in those portions of Lower Burma where registration is in force, both births and deaths are recorded, while in rural areas in Upper Burma deaths alone are recorded.

The birth and death registers in towns, and the books of counterfoils in villages, are checked by District officials, and vaccinators are required to verify entries by house-to-house inquiries and through other collateral information obtained in the course of their vaccination duties. In towns possessing cemetery caretakers, a further check is maintained over death registers by comparison with the registers of burials. The entire Province has not, however, been brought under this system of registration, for there are tracts not accessible to patrols, such as the more mountainous parts and those inhabited by illiterate people or wild tribes. These are treated as excluded tracts, and their area aggregates roughly 54,000 square miles. Tracts not easily accessible to patrols, and with which communications are open only at certain seasons of the year, are considered as irregularly patrolled areas, and are treated separately in the annual returns of vital statistics. All others are regarded as regularly patrolled tracts.

The following table gives details regarding the ratio of registered births and deaths for the years 1881, 1891, 1901, and 1904:—

	Population under registration.	Ratio of registered births per 1,000.	Ratio of registered deaths per 1,000.	Deaths per 1,000 from			
				Cholera.	Small-pox.	Fever.	Bowel complaints.
1881 . .	3,692,263	19·98	15·75	1·42	0·48	7·51	1.03
1891 . .	4,595,569	20·74	15·93	0.52	0·29	7·76	0·91
1901 . .	5,546,265	32·07	21·74	0·64	0·44	8.65	1·47
1904 . .	8,482,016	32·83	21·07	0·35	0·21	8·90	0·94

The rise under both heads during the two decades in question (a rise which, it may be observed, is very much more marked during the second than during the first) speaks eloquently of enhanced precision in registration; but a comparison of even the most recent Burmese figures with the data obtained in countries where the system of record-

ing vital statistics is admittedly within a measurable distance of absolute accuracy shows that there is still room for improvement in the record of births and deaths in the Province. Birth and death rates vary considerably from District to District, but no purpose would be served by a presentation of figures contrasting the highest and the lowest, except to show where registration was thorough and where the reverse.

Fever, bowel complaints, cholera, and small-pox are the most frequent causes of death in Burma. Since February, 1905, plague has established itself in Rangoon, has spread to a few Districts inland, and has not yet been eradicated. Fevers are of various kinds, malarial and other; but it should be borne in mind, when considering the mortality statistics of the Province as a whole, that in the mouth of a Burman the expression *pya thi* ('to have fever') is extraordinarily elastic and is usually made to cover, besides fevers proper, almost every disease which has no very marked outward symptoms and possesses no name of its own in Burmese. In certain localities, and at certain seasons of the year, dysentery and diarrhoea are lamentably rife. The larger urban areas of the Province are seldom without some sporadic cases of cholera, but it is only now and then that the disease appears in epidemic form. Vaccination during the past twenty years has enabled good headway to be made against small-pox, which in former days, judging by the large number of pock-marked Burmans that are met with, must have been a scourge of extreme virulence. Of the less serious diseases, worms, diseases of the eye and of the digestive organs, rheumatic affections, and venereal diseases are among the most prevalent.

Infant mortality in Burma, judged by a European standard, is very high. How much of the existing state of things is due to a barbarous obstetrical system, and how much to carelessness after birth, is doubtful; but it is clear from the returns abstracted below that one infant out of every four born in Burma dies before the first anniversary of its birthday.

	Infant population.	Number of deaths under one year.	Deaths per 1,000 of infant population.
1881 . .	88,105	10,779	122·3
1891 . .	125,375	15,219	121·3
1901 . .	132,930	33,488	251·9

The apparent increase in the mortality of children of under one year of age from 12 to 25 per cent. is at first sight startling, for there are no indications of greater neglect of their children on the part of indigenous parents or of greater sickliness among the infants. The rise is in reality nothing more or less than a sign of more effective registra-

tion, and of the gradual disappearance of the belief, so common in backward races, that the concerns of so unimportant a section of the community as babies of less than one year are not a matter that can possibly come in any way within the cognizance of Government.

Of the 10,490,624 persons shown in the census returns for 1901, 5,342,033 were males and 5,148,591 females. In other words, 50·9 per cent. of the population of Burma were of the male sex and 49·1 per cent. of the female, or for every 1,000 males there were 962 females. The Census of 1891 showed a similar proportion. It has been held by competent observers that the ratio of females to males in a given race is generally higher or lower according as woman occupies a better or a worse position in the social scale. The absolute freedom of the Burmese women, and the prominent part they play in the industrial no less than in the social life of the country, are phenomena that are very striking to those accustomed to the *zanāna* life of India; and one would expect the emancipated women of Burma to bear a higher proportion to the males than is the case in other parts of the Indian Empire. As a matter of fact, the ratio in Burma is lower than in several other Provinces. This is, however, due to immigration, the male immigrants exceeding the female to a very large extent. In the Districts that are but little resorted to by settlers from India the females are more numerous than the males, and they also predominate in the case of all the principal indigenous races except the Karens and the Talaings. The figures for Burmans are males 3,191,469 and females 3,317,213; for Shans, males 386,370 and females 400,717; and for Chins, males 89,008 and females 90,284. The question of female infanticide does not, fortunately, arise in Burma.

The following table gives statistics of civil condition in Burma proper, as recorded in 1891 and 1901:—

Civil condition.	1891.			1901.		
	Persons.	Males.	Females.	Persons.	Males.	Females.
Unmarried .	4,048,637	2,162,144	1,886,493	5,014,809	2,683,030	2,331,779
Married . .	2,939,595	1,529,239	1,410,356	3,545,729	1,839,152	1,706,577
Widowed .	617,328	184,918	432,410	669,364	195,848	473,516

Reducing the figures to percentages, they work out thus:—

Percentage in	Unmarried.		Married.		Widowed.	
	Males.	Females.	Males.	Females.	Males.	Females.
1891 . .	28·4	24·8	20·1	18.6	2·4	5·7
1901 . .	28·8	25·0	20·0	18·7	2·2	5·3

Marriage in Burma is a purely civil ceremony and has no religious

conception underlying it. Matches are arranged by the parents of the young couple, or through the medium of a go-between, or merely with the mutual consent of the parties. The wedding is ordinarily made the occasion of a feast to which friends are invited, and during the course of which the bride and bridegroom join hands (*let tat*) and eat out of the same dish; but this ceremony may be dispensed with. The mere fact of living and eating together as husband and wife is sufficient to constitute a legal union. Remarriage both of widows and widowers is common, and the widowed form only a small proportion of the population. Divorce is very freely resorted to, but is generally followed by a second marriage. The figures would appear to show that the readiness to embrace matrimony a second time has, if anything, increased during the last decade.

The statistics of civil condition by age periods show a rather higher total of married girls and boys of immature age in 1901 than in 1891, an increase for which the growth of Indian immigration during the decade is responsible, for infant marriage is not practised by the people of the country. They indicate further a slightly increased tendency on the part of the indigenous male to defer his marriage until after the twenty-fifth year of life. The matrimonial customs of the Kachins and Karens, which restrict their choice of wives to certain families or clans, appear to exercise an appreciable effect upon their readiness to marry. In their case the proportion of married to the total population is very much below that of the Burmans and the Shans. Polyandry is unknown, but polygamy exists, though not to such an extent as to produce any abnormal figures in the sex and civil condition return.

The indigenous languages of Burma belong, with two exceptions, to the Mon-Khmer and the Indo-Chinese families of language. The latter can be subdivided into two sub-families, the Tibeto-Burman and the Siamese-Chinese. Burmese, the most important of the languages of the Tibeto-Burman sub-family, was spoken by 7,006,495 persons in 1901. Arakanese, a dialect of Burmese, claimed 383,400 speakers in the same year. Kadu, the vernacular of a tribe in the north-west of the Province which is fast dropping out of use, has been placed provisionally in the Tibeto-Burman sub-family. The Census showed that in 1901 it was spoken by 16,300 persons, and that the Mro of the Arakan Hill Tracts, which has been similarly classified, was the speech of 13,414 inhabitants of Arakan. Kachin and Chin are also Tibeto-Burman languages, not quite so closely allied to Burmese as the others. Their vocabulary differs, but their structure bears a strong family resemblance to Burmese. Kachin was the language ordinarily used by 65,570 persons within the area treated regularly in 1901. A large proportion of the Kachin-speaking folk are inhabitants of the estimated areas, where language data were not collected, and it is probable that

the aggregate of Kachin speakers in the Province is nearly double the figure given above. The Chin speakers numbered 176,323. There are various forms of Chin, but the only largely spoken variety that was not classified under the general head of Chin was the speech of the Kamis of Northern Arakan (24,389). The vernaculars of the Lisaws, the Muhsös, the Akhas, the Marus, and of a few other hill tribes in the north and east, are also comprised in the Tibeto-Burman sub-family.

Shan and Karen are the two main local representatives of the Siamese-Chinese sub-family. Shan proper was the vernacular of 750,473 persons in 1901, Karen of 704,835 persons. These totals do not include the speakers of the trans-Salween dialects of Shan known as Hkün and Lü, or the quasi-Karen vernaculars of Karenni and its neighbourhood. Taungthu, which is practically a dialect of Karen, was spoken by 160,436 persons in 1901. Siamese and Chinese, the two most important non-indigenous tongues of the sub-family, are both spoken in Burma, Siamese (19,531) for the most part in the extreme south, on the Siamese border, and Chinese (47,444) more or less through the whole of the Province by Chinese immigrants.

Talaing, the speech of the Mons or Peguans, who for many years strove with the Burmans for the mastery in Burma, belongs to the Mon-Khmer or Mon-Anam family, and was returned by 154,483 persons in 1901. Talaing as a spoken language is gradually dying out, its place being taken by Burmese. The remaining languages of the Mon-Khmer family spoken in the Province are the vernaculars of various hill tribes scattered through the Shan States, such as the Was, the Palaungs, the Riangs, and the Danaws. Palaung was the speech of 51,121 persons in 1901. Wa is spoken largely to the east of the Salween, but the majority of its speakers were entirely excluded from the census operations and their number is not even approximately known.

The only two vernaculars of Burma that do not belong to either of the two families are Daingnet, a corrupt form of Bengali spoken in Akyab District near the borders of Chittagong; and Salon (Selung), the speech of the sea-gipsies of the Mergui Archipelago, which has been placed in the Malay language family. The Malayo-Polynesian languages, though related to the Mon-Khmer family, have been separated from that group, because the relationship has not yet been definitely settled.

The proportion borne by the speakers of the chief vernaculars of the Province (namely, Burmese, Shan, Karen, Talaing, Chin, and Kachin) to the population of Burma proper in 1891 and 1901 is indicated in the statement below :—

	1891.	1901.
Chief vernaculars . . .	6,685,555	8,079,914
Other languages . . .	920,005	1,149,988

The following are the totals of persons returned in 1901 as speakers of the principal non-indigenous languages belonging to language families other than the Indo-Chinese:—

English	18,500
Hindustāni	95,122
Bengali	204,973
Hindī	28,689
Punjābi	15,803
Tamil	99,576
Telugu	96,601

Caste is absolutely unknown as an indigenous institution in Burma. It is foreign to the democratic temperament of the people, and an ethnical analysis of the inhabitants of the country must of necessity be based on considerations other than that of caste. In existing conditions, the most satisfactory classification of the indigenous races of Burma is that which proceeds on a linguistic basis. Of the total population in 1901, 6,508,682, or 62 per cent., were Burmans. Of the other Tibeto-Burman peoples, the Arakanese of the western coast numbered 405,143, the KADUS of Kathā 34,629, and the Mros of Akyab and Northern Arakan 12,622. The INTHAS, a community found scattered through the Southern Shan States, numbered 50,478, though only 5,851 of them spoke the Intha dialect. The KACHINS occupy the hills to the extreme north of Upper Burma, and are steadily making their way southwards down the eastern fringe of the Province; 64,405 of them came within the scope of the regular census operations in 1901, and about 50,000 were residents of the estimated tracts, where no regular collection of race statistics was made. The Chins (*see* CHIN HILLS) are the predominant folk along the western border of Burma from the level of Manipur down to Akyab District, and thence southwards along the range of hills that separates the old province of Arakan from the Irrawaddy valley. The Chins proper numbered 179,292 in 1901, and the Kamis of Akyab and Northern Arakan, a closely allied tribe, 24,937. The DANUS (63,549) are a half-bred Shan-Burmese community inhabiting the borderland between Burma and the Shan States; and the Taungyos (16,749) are also borderers, frequenting the same region and talking a language which resembles an archaic form of Burmese. The AKHAS or Kaws, a hill tribe of the trans-Salween Shan States, come probably from the same prehistoric stock as the Burmans, the Kachins, and the Chins; so also, there is reason to believe, do the Lisaws, the Muhsös, the Maingthas, the Szis, the Lashis, and the Marus of the north-eastern hills. The Akhas numbered 26,020 in 1901; the Muhsös, 15,774; the Kwis, a branch of the Muhsös, 2,882; the Lisaws, 1,427. The remaining tribes are for the most part inhabitants of the areas estimated at the Census of 1901, and their strength is but imperfectly known.

In the Siamese-Chinese group the Shans and Karens are most strongly represented. The total number of Shans in 1901 was 787,087 (exclusive of the Lem, the Hkün, and the Lü of trans-Salween territory, but including the Shan Tayoks of the Chinese border). The Shans (*see* SHAN STATES) are the prevailing nationality in practically the whole of the uplands that lie between the Irrawaddy and the Mekong from the 20th to the 24th parallels of latitude, and form a large proportion of the population in the country that separates the western bank of the Irrawaddy from the Manipur and Assam frontiers. West of the Irrawaddy they have become absorbed to some extent into the Burman communities that surround them, and nearly the whole of their territory forms part of the regularly administered areas of the Province; but east of the river they have preserved their race characteristics unimpaired, and are administered through the native rulers of the States into which their country is politically divided. The KARENS are the hill tribes of the south-eastern areas of the Province from Toungoo to Mergui, and are also found scattered over the delta of the Irrawaddy. The greater number of the Karens of Lower Burma are members of one or other of two main tribes, the Sgaw and the Pwo. Towards the north and beyond the limits of Lower Burma, in Karenni and the Southern Shan States, a third tribe, the Bghai, preponderates. In 1901 a total of 86,434 persons returned themselves as Sgaw, and 174,070 as Pwo Karens, the tribe in the case of 457,355 others being not returned. The Bghai were for the most part residents of the estimated areas of Karenni when the Census took place. Within territory treated regularly, 4,936 Red Karens (Bghai) were enumerated. The Bres, the Padaungs, and the Zayeins of Karenni and its neighbourhood have been classed linguistically with the Bghai, though it is possible that further research may show that ethnically they should be placed in some other category. In all, 7,825 Padaungs and 4,440 Zayeins were found in areas within the scope of the regular Census. They were practically all residents of the south-western corner of the Southern Shan States. The TAUNGTHUS, like the Padaungs and the Zayeins, are of doubtful origin. They are found in the hills along the eastern border of Burma from Amherst to Yamethin, and numbered 168,301 in 1901. Their language is to all intents and purposes a form of Karen, and it is probable that there is more Karen than any other element in their composition.

The TALAINGS are the main representatives of the Mon-Anam group in Burma proper. They are found in their greatest strength in the country round the mouths of the Irrawaddy, the Sittang, and the Salween, which formed the nucleus of the ancient kingdom of Pegu. In 1901 their aggregate was 321,898. Their numbers are diminishing, and they are being gradually absorbed into the Burmese population of the Province. Of the Mon-Anam hill tribes of the Shan States the most

numerous according to the census figures of 1901 are the PALAUNGS (56,866), who are found for the most part in the Ruby Mines District and the hills that form the northern border of the Northern Shan States. It is probable that the WAS, whose country lies to the east of the Palaung tract on the farther side of the Salween, are as numerous as the Palaungs; but, as their northern areas were untouched at the time of the Census, nothing is known of their real strength. In the regularly enumerated areas in the trans-Salween Shan States 5,964 persons were returned as Was, 15,660 as Tai Loi, 1,351 as Hsen Hsum, and 1,096 as Pyin. The last three tribes are, it is believed, varieties of the Wa stock. The Riangs or Yins are almost certainly, and the Danaws probably, of Mon-Anam extraction. The latter, who numbered only 635 in 1901, are almost extinct as a separate tribe. They inhabit the Myelat States to the east of Upper Burma. The Yins numbered 3,094 at the last Census. Their habitat lies in the north-east of the Southern Shan States.

There are no very marked differences in the physical characteristics of the indigenous races of the Province. Like all southern Mongolians, their stature is below the average. They are thick-set and for the most part sturdy. Their complexion ranges through various shades of olive-brown, and is darker on the whole than that of the Chinese; their hair is black and straight and on the face ordinarily very sparse. It is usually left long on the head and in most cases is tied into a top-knot. They are round-headed or brachycephalic, have high cheek-bones and broad noses. Their eyes are small and black but not as markedly oblique as those of the Chinese; and, taken as a whole, they show a greater tendency to approximate to the Caucasian type than do the latter.

Of the Hindu castes the following show the largest totals: Paraiyan, 25,601; Māla, 18,522; Kāpu, 11,214; Palli, 13,250; Brāhman, 15,922; Chhatrī or Rājput, 13,454. A total of 41,663 males and 7,758 females were returned in the census schedules under the general designation of Sūdra. Among the Musalmān tribes the Shaikhs are numerically the most important in Burma, and their total of 269,042 represents 80 per cent. of the Muhammadan population of the Province. Saiyids and Pathāns numbered respectively 8,970 and 9,224; and Zairbādis, the offspring of unions between Burmese women and Musalmān natives of India, 20,423.

The British in Burma in 1901 numbered 7,450 (5,948 of whom were males and 1,502 females), and the Eurasians 8,884. A total of 1,090 persons were returned as Europeans, no nationality being given. It is probable that the majority of these were, strictly speaking, Eurasians. The Chinese of the Province aggregated 62,486, as against 41,457 in 1891.

Of the religions of Burma, Buddhism has by far the largest number of professed adherents. In 1901 a total of 9,184,121 persons, or 88·6 per cent. of the population, were returned as Buddhists. The Buddhism of Burma is an amalgam that has resulted from a fusion of the elements of the Northern and the Southern schools of Buddhist thought, introduced from India on the one hand and from Ceylon on the other. This amalgamation was, as already stated, completed at Pagan in the eleventh century. Before that, a corrupt form of Buddhism prevailed, which appears to have been an admixture of Lamaism and Tantric Buddhism, its professors being called the *Ari* or *Ariya*, the 'noble.' Their robes were dyed with indigo, like those of the Lāmas of Tibet and China, and they wore their hair at least two inches long. They were not strict observers of the vow of celibacy, and the basis of their doctrines was that sin could be expiated by the recitation of certain hymns.

In theory Buddhism is the general religion of the country. In point of fact, though it has done much to soften and humanize the people, it is far too often nothing more than an outward veneer covering the spirit-worship that is everywhere practised openly, one might almost say shamelessly. The Burmese Buddhist Church is split up into two main parties, which are known as the *Sulagandi* and the *Mahagandi*. The members of the former set store by ritual and outward observances; those of the latter are to all intents and purposes fatalists, but the differences between the two parties are largely academic. Sectarian bitterness is practically unknown. There are various minor sects, but none has achieved any marked distinction. The head of the Church in Upper Burma is the *thathanabaing* or archbishop; and in both sections of the Province there is a recognized hierarchy, which comprises dignitaries known as *gaingoks* (bishops) and *gaingdauks*, as well as the ordinary *pongyis* or monks. The religion of the people finds an outward and visible sign in the pagodas and monasteries that are prominent features of nearly every village. The Burmese pagoda is bell-shaped, built of brick and usually whitewashed, though many shrines are partially, and a few wholly, gilded. Timber is the material ordinarily used for the *kyaungs* or monasteries that the pious have erected in thousands through the length and breadth of the Province, and enormous sums are frequently lavished on these and other works of merit. The monasteries are the indigenous schools of Burma, at which the village boys all learn to read and write. It is not only as scholars, moreover, that the people have had experience of their *kyaungs*. Practically every male Burman assumes the yellow robe of a monk for a shorter or longer period as the case may be, and monasticism thus plays a part in the life of the inhabitants of the country that is absolutely unique.

Next to the Buddhists in point of numbers come the spirit-worshippers or Animists, the majority of whom inhabit the Hill Tracts. Their aggregate in 1901 was 399,390. This figure does not, however, adequately represent the strength of Animism in Burma, for it does not include the residents of the estimated areas where no religion data were collected at the enumeration. The population of these areas amounted to 127,011; and, as there is good reason to believe that it was made up very largely of spirit-worshippers, the actual strength of the Animists may be fixed at something approaching half a million.

Islām was represented at the latest Census by 339,446 persons, and Hinduism by 285,484. After these, but separated from them by a considerable numerical gap, come Christians with a total of 147,525, of whom 129,191 were natives, while the adherents of the other religions, most of whom were Sikhs, totalled only 7,647. The largest proportional increase during the decade ending 1901 is among the Animists, who at the close of this period were shown as more than twice as numerous as at its beginning; but this is due solely to the fact that the Census of 1901 dealt with several large backward hill areas inhabited by spirit-worshipping tribes who were untouched in 1891. A comparison of the totals in each year for Burma proper gives a better idea of the relative growth of the main religions. On this basis we find that during the period in question Hindus have increased at the rate of 63 per cent., Animists at 41, Musalmāns at 33, Christians at 21, and Buddhists at 19 per cent. The last figure may be looked upon as indicating roughly the natural rate of increase in the Province, the conversions from Buddhism to Christianity and Islām being counterbalanced by accessions from the ranks of the spirit-worshippers. In the case of the Hindus and the Musalmāns, immigration from outside the Province accounts for the high rate of increase.

In Lower Burma, where data extending over more than twenty years are available, we find that between 1881 and 1891 the Buddhists increased by 24 per cent., but in the following ten years by only 19 per cent. This apparent diminution in the rate of growth is probably due to the return to their homes in Upper Burma of villagers whom the disturbances that succeeded the seizure of Mandalay had driven temporarily into Lower Burma. Among Musalmāns and Hindus, on the other hand, the rate of growth during the first half of the twenty years in question was by no means as conspicuous as during the second.

The Christian population of Lower Burma rose between 1881 and 1891 by 33 per cent., and between 1891 and 1901 by 19 per cent. The strength of this population is, however, largely affected by the movements of British troops, and it is probable that the falling off in the rate of increase during the second decade is not really as marked as it would appear to be. The principal Christian denominations returned

in 1901 were Baptists (66,860), Roman Catholics (37,105), and Anglicans (22,307). In Burma proper the Anglicans increased by 76 per cent. between 1891 and 1901 and the Roman Catholics by 48 per cent. The Baptists show a falling off of 18 per cent. for the same period, but this diminution is in all probability due to the fact that a large number of Baptist native Christians did not return their sect at the Census.

Burma forms an Anglican diocese under the administration of the Bishop of Rangoon. The diocese was created in 1877, and then included Lower Burma only. In 1888 new letters patent were granted extending it to Upper Burma. The Bishop is assisted by an archdeacon and nine other chaplains of the Bengal (Rangoon) Ecclesiastical establishment.

The Anglican missions in Burma are worked through the agency of the Society for the Propagation of the Gospel. The missionary staff consisted in 1903 of eight British clergy and ninety-five catechists and sub-deacons. The Society labours among the Burmese, the Tamils, and the Karens, its principal stations being Rangoon, Kemmendine, Moulmein, Mandalay, Shwebo, and Toungoo.

From 1721 to 1866 the Roman Catholic Church in Burma was represented by a single mission, known as the Vicariate Apostolic of Ava and Pegu. Subsequently the Province was divided into three distinct missions, one for southern, one for northern, and one for eastern Burma, each in charge of a bishop; and in 1879 the Arakan administrative division was transferred to what is now the diocese of Dacca.

The establishment of the American Baptist Mission dates from the year 1813, when Messrs. Judson and Rice started mission work in Rangoon; but difficulties encountered after 1824 forced the missionaries to transfer their main sphere of action to the British territories of Arakan and Tenasserim. The Tavoy mission was opened in 1825, and a commencement was there made of that widespread evangelization of the Karens which has for so long been associated with the name of the mission in Burma. The Kyaukpyu mission was founded in 1831, the Moulmein mission in 1827; and after the second Burmese War work was renewed in Rangoon, and started in Toungoo, Henzada, and Bassein. The teaching of the Kachins had been commenced in Bhamo in 1877, several years before the annexation of Upper Burma, and after Thībaw's deportation mission stations were established in other Districts of the newly acquired province. Within the last few years the mission has extended its operations into the Shan States, the Chin Hills, and Karenni. Its work lies mainly among the Karens, with whom the greatest measure of success has so far been obtained; but the missionaries labour among the Burmese also, and the Shans, the Chins, and the Kachins have received attention. According to the latest official

returns of the mission, there are twenty-nine stations in the Province. The mission has been eminently useful from an administrative point of view, for it has been one of the main instruments in bringing a knowledge of the languages of the country within the reach of foreign residents. Judson's Burmese Dictionary has long been a household word in Burma; and what was done for Burmese by that early pioneer has been, and is being, accomplished by his successors for other Provincial vernaculars.

The following are the totals for the principal religions returned in Burma proper in 1891 and 1901 :—

	1891.	1901.
Hindus	171,577	279,975
Musalmāns	253,031	337,083
Buddhists	6,888,075	8,223,071
Animists	168,449	237,508
Christians { Natives	101,303	127,523
Christians { Others	19,465	18,203
Others	3,660	6,539

The great majority of the people of Burma are agriculturists. In 1901, 5,739,523 persons were returned under the head of agricultural labourers. This figure, in common with all the occupation totals given in this paragraph, includes both actual workers and the persons dependent on them. In addition to the agricultural labourers, 717,753 persons appeared under the category of landholders and tenants. The growers of special products numbered in all 385,528; and the sum of persons directly supported by the produce of the soil may thus be taken at 6,842,804, or slightly more than 66 per cent. of the total population. This figure represents the greater part, but by no means the whole, of the agricultural interests of the country, for a certain section of the rural community combine cultivation with other non-agricultural pursuits. An attempt was made at the last Census to obtain data regarding the persons by whom agriculture was thus pursued as a subsidiary occupation, and the total of these partial agriculturists was found to be 47,524. It is possible that this figure does not give an accurate picture of the extent to which agriculture is carried on as an additional source of income among the non-agricultural folk, but it seems clear that the proportion of the population liable to be directly affected by general scarcity of crops is not likely to exceed appreciably the 66 per cent. mentioned above. Taking the figures for pasture with those for agriculture, the ratio on the Provincial aggregate is 67 per cent. Under pasture, cattle-breeders (25,508) and herdsmen (46,463) afford the most conspicuous totals.

The artisan section of the community forms roughly 18·5 per cent. of the total population of the Province. The figure on which this ratio is calculated (1,923,084) represents the total of persons shown in the

census returns as engaged in the preparation and supply of material substances. Strictly speaking, this comprises certain occupations that involve no real technical knowledge, but for the purposes of general presentation the classification is probably exact enough. In the artisan classes the following occupation totals may be cited: fishermen and fish-curers, 126,651; turners and lacquerers, 14,274; silk-weavers, 34,029; cotton-weavers, 189,718; tailors, 57,915; goldsmiths, 42,112; iron-workers, 26,221; potters, 19,667; carpenters, 69,886; and mat-makers, 53,585. The commercial classes numbered 449,955, or 4·34 per cent., and the professional 264,047, or 2·54 per cent., of the Provincial aggregate. More than one-third of those engaged in commerce come under the unspecified head of shopkeepers; while the most important of the professional occupations, from a numerical point of view, is that of the religious mendicant (138,329), a term which includes, besides *pongyis* or Buddhist priests, probationers for the priesthood and other occupants of monasteries. Medicine was the means of support of 43,252 rural practitioners and their families, teaching maintained 12,178 actual workers and dependents, and the number of persons of all kinds dependent upon the legal profession totalled 7,507. Altogether 392,654 inhabitants of the Province came into the category of general labourers or coolies. This occupation constituted the greater part of those classed under the head of unskilled non-agricultural labourers, who formed 4·2 per cent. of the total population. Government service provided occupation for 191,796 persons, or for 1·85 per cent. of the Provincial total, the largest individual figure being shown by village headmen, who, with their dependents, reached a total of 62,335. The number of those engaged in personal or domestic service was 104,252; and those whose means of subsistence were independent of occupation, such as pensioners, convicts, and the like, numbered 41,522.

Rice forms the basis of all the Burman's meals, and is eked out with condiments according to his means. There are no caste restrictions as to food; and, when it is available, the Burman has no hesitation in eating any form of animal and vegetable nutriment that a European would consume. He affects, besides, certain dainties that are repugnant to Western culinary notions, but is on the whole by no means a dirty feeder. This cannot be said of the Karens, who are partial to vermin, and to whom scarcely any kind of animal food comes amiss. Dogs are considered a delicacy by the Akhas, the Was, the black Marus, and other hill tribes in the east of the Province; but Burmans will not touch them. Onions and chillies figure largely in indigenous recipes; but the most distinctive condiment is *ngapi* or salt-fish paste, a compound which, though exceedingly offensive to the untutored nostril, has achieved a widespread popularity throughout the Province and appears

at nearly every repast. On the whole, however, the Burmese villager's daily meal, though possibly not as frugal as that of many Indian peasants, is exceedingly simple.

The male Burman's dress consists of a jacket, ordinarily white, a cotton or silk waistcloth (*paso* or *longyi*), and a silk headkerchief (*gaungbaung*). Women wear a jacket resembling the men's, and a petticoat or skirt of silk or cotton. The original Burmese petticoat (*tamein*) was open down the front and showed a considerable portion of one of the legs when the wearer walked. It is still largely worn, though the closed *longyi*, a trifle longer in the women's than in the men's dress, is rapidly displacing it in the urban areas of the Province. Nothing is worn on the head by Burmese women, but among the Shans the fair sex cover the head with a cotton head-cloth. In place of the head-kerchief that forms a portion of the male attire, the Burmese woman, when dressed in her best, drapes her silk cloth over her shoulders as a scarf. The scarf is, however, not a portion of her everyday attire. On ordinary occasions it is dispensed with, and the jacket is also frequently discarded by both sexes while the household or other work is being done. When it forms her only garment, the woman's skirt is wrapped round her body from close under her armpits to her knees. While engaged in manual labour, the man ordinarily tucks up his waist-cloth in such a way as to allow absolute freedom for the lower limbs. It is on these occasions that a full sight can be had of the tattooing with which the male Burman decorates the middle portion of his body from the waist to the knee. Where the wearers can afford it, jewellery is much affected by the fair sex. It is mostly gold, and takes the form of bangles, necklaces, rings, ear ornaments, and, in the case of children, anklets. The main dress characteristics of the chief non-Burman hill tribes are detailed in the tribal articles.

The ordinary village residence is a hut raised on piles some little distance off the ground, built of jungle-wood, timber, and bamboo-matting, and roofed with thatch or split bamboo (*wagat*). The better-class houses have plank walling and flooring, and corrugated iron is gradually obtaining a prominent place in the domestic architecture of the country; but no real use has yet been made by the Burmans themselves of brick as a material for house-building. The empty space below the house is frequently used as a cattle-pen. The style of building varies little throughout the country. The Kachins and other hill tribes are in the habit of building barrack-like houses, in which several families live together; but the general rule is for one or at most two families to occupy the same building. Whether they are erected in the hills or the plains, the materials of which the houses are put together are uniform. Bamboo supplies the greater part of the frame-work, except in the dry zone, where bamboos are scarce and hovels are

constructed almost wholly of palm leaves. The Burmans dispose of their lay dead by burial. The bodies of monks are burned with more or less ceremony. Burial-grounds are ordinarily situated to the west of the village.

Pwe is the term applied in Burma to nearly every form of entertainment, whether dramatic or otherwise. The *zat pwe* is performed by living actors; it represents episodes in the life of one or other of the incarnations of Buddha, and the dialogue is helped out with much singing, dancing, and buffoonery. Similar plays are enacted by means of marionettes (*yokthe*), whose manipulation is exceedingly effective and involves considerable skill. Performances of this nature are given by professionals; but *pwes* of other kinds are frequently organized by amateurs, the best-known form being probably the *yein pwe* or 'posture dance,' in which as a rule a number of girls take part. Pony, boat, and bullock-cart racing are popular pastimes, and cock-fighting is indulged in freely. One of the most striking of the indigenous games is that known as *chinlon*, which consists in keeping a light ball of plaited cane in the air for as long a time as possible by successive blows from the feet, knees, or almost any other portion of the body but the hand. The players stand in a circle and kick the ball from one to the other, and adepts are able to keep it in motion for a surprisingly long time without letting it touch the ground. Among other amusements may be mentioned kite-flying, and games resembling chess, backgammon, and marbles, the last, known as *gonnyinto*, being played with the large flat brown seeds of the *Entada Pursaetha*. Gambling is a national weakness which it has been found necessary to keep within bounds by special legislation. Boat, pony, and other races are invariably the occasion for heavy betting. There are numerous games of chance, of which one of the best known is the 'thirty-six animal' game. The Burmans are inveterate smokers. Both sexes indulge freely in tobacco and commence smoking at a comparatively early age, but the cigars that they ordinarily affect have the merit of extreme mildness and contain as a rule a great deal that is not pure tobacco. The outer covering is ordinarily of maize husks or *thanat* leaves. The strong black Burma cheroot of the European market is but little favoured by the natives.

The two principal festivals of the Burmans are the New Year, which occurs in April, and the end of the Buddhist Lent, which takes place in October. The former celebrates the annual descent to earth of the Thagya Min, the king of the Nat or spirit kingdom, and is often known as the 'water festival,' as the most prominent feature of the merry-making consists of what may be entitled a battle of squirts which leaves the revellers drenched to the skin. The autumn season of rejoicing might appropriately be termed the 'fire festival,' for the most striking of its ceremonies is the general illumination that takes place, the

sending up of fire balloons, and the floating of diminutive lamps down the streams and rivers.

The full moon of the month of Tabaung (roughly speaking, March) is made the occasion for pagoda festivals and other gatherings. The commencement of the Buddhist Lent in July has its less exuberant ceremonies; and the Tazaungmon festival, between the end of Lent and the close of the calendar year, is marked by rejoicings in certain parts of the country. All these are treated as public holidays, and all are observed more or less by the non-Burman Buddhist peoples of the country, such as the Shans, the Taungthus, and the Palaungs, as well as by the Burmans.

The ordinary Burmese title is *Maung* ('Mr.') for males and *Ma* ('Mrs.' or 'Miss') for females. To these are added one or more names usually indicative of some object, animate or inanimate, or of some quality. Children are named at birth, and convention usually requires that the initial letter of each child's name should be that appropriate to the day of the week on which he or she was born. Thus, for example, the gutturals (*k*, *g*, *ng*, &c.) belong to Monday, the palatals (*s*, *z*, &c.) to Tuesday, the labials to Thursday, and the dentals to Saturday. Hence a boy born on a Monday might suitably be called Maung Gale (*gale* = 'small'). *Nga* and *Mi* are less respectful substitutes for *Maung* and *Ma*. They are used for children, inferiors, and the like. With advancing years the honorific *U* is often applied to a man in place of *Maung*, especially if he is a senior of substance and position; and *Kyaungtagā*, with its feminine *Kyaungamā*, is a title earned by a person who has gained merit by the construction of a *kyaung* or monastery. A Pāli title takes the place of the ordinary lay name on the assumption of the yellow robe and admission into a monastery. Family names are unknown except among the Kachins, and there is no change in the woman's name at marriage. *Shwe* ('gold' or 'golden') occurs frequently in Burmese names, and figures largely in the nomenclature of towns, villages, rivers, hills, &c. Occasionally it indicates the presence of old gold-workings (*Shwedwin*, 'gold-mine'; *Shwegyin*, 'gold-sifting'); but more ordinarily it is purely honorific (*Shwedaung*, 'golden hill'; *Shwelaung*, 'golden boat'). *Myo* ('town'), *ywa* ('village'), *taung* ('hill'), *myit* ('river'), *chaung* ('stream') form the component part of a large proportion of Burmese place-names, their counterparts in Shan being words like *möng* ('state'), *nam* ('water' or 'river'), *loi* ('hill'), *nawng* ('lake'), and the like.

Agriculture.

Agriculture, as already stated, affords the means of support to over 66 per cent. of the population of Burma, and is the subsidiary occupation of a further portion of the community. Cultivation is regulated more by rainfall than by the conformation of the surface of the soil. Rice is grown wherever there is sufficient

moisture and land in any way adapted to its cultivation. In the dry zone of Upper Burma, sesamum, maize, *jowār*, cotton, beans, wheat, and gram largely take the place of rice; but these alternative products have been practically forced upon the Upper Burma cultivator by climatic conditions, for it is an almost universal rule that where rice of any kind can be cultivated, it is raised to the exclusion of other and apparently more appropriate 'dry crops.' Throughout Lower Burma the rainfall is ample for rice cultivation, and little else but rice is produced there, and the same may be said of a substantial portion of the wet division of Upper Burma. Rice cultivation in Burma is of two main classes: namely, *le* ('lowland') and *taungya* ('hill-slope'). The *ya* crops, such as sesamum, cotton, and *jowār*, cover the rolling uplands of the dry Districts of Upper Burma and so much of the plain as cannot be brought under rice cultivation. Wheat and gram are grown in the better kinds of lowland soil; and beans and maize, with a host of other minor crops of the class ordinarily known as *kainggyun*, are harvested in the rich alluvial soil left behind as the waters of the rivers recede from their flood limits during the dry season.

Rice is the staple food-grain of the Province. To eat a meal of any kind is, in Burmese, to 'eat rice' (*tamin sa*). There are numerous varieties of rice, distinguishable from each other by colour, texture, consistency when cooked, and the like; but their names are largely local and, from an agricultural point of view, their differences are not of special importance. A more suitable classification, after that which separates the plain from the upland rice, is by harvests or seasons. There are three main harvest classes: *kaukkyi*, the big or late rains rice, which is sown in nurseries (*pyogin*) at the beginning of the monsoon, transplanted during the rains, and reaped during the cold season; *kaukyin*, the quick-growing or early rains rice, which is sown in May–June and gathered during the height of the rains; and *mayin*, or dry-season rice, which is sown during the cold season on the edges of meres or other inundated depressions from which the water is receding, and is garnered about the commencement of the rains. Other harvest classes are known as *kauklat* and *kaukti*. Of these, the *kaukkyi* provides the bulk of the rice of Burma. Very little else is cultivated in the Lower province, and it is practically this crop alone that is exported. It is longer in the stalk than the other kinds and takes longer to mature. In Upper Burma the climate does not always lend itself to *kaukkyi* cultivation, and recourse has to be had there to the inferior varieties. *Taungya*, or 'hill rice,' is sown, as soon as the rains set in, on hill slopes which have been cleared and fired during the hot season. The seed is not transplanted from nurseries, as is usual in the case of *le* rice, but is scattered broadcast or dibbled in the ash-impregnated soil, and the crop is reaped towards the close of the rains. The system

of cultivation adopted is to the last degree wasteful, for the soil is soon exhausted and constant moves have to be made by the *taungya*-cutter to new and uncleared hill-sides.

There is nothing particularly attractive in the paddy-fields of Burma. A stretch of typical delta rice country in the early rains is a dingy expanse of mud and water, studded with squat hamlets, and cut up by low earth ridges into a multitude of irregular polygons through which mire-bespattered plough bullocks wade. Later on, with the transplanting, the plain grows green; and, as the young plants accustom themselves to their surroundings, this hue becomes more pronounced, till the cold season draws near and the expanse takes on a tinge of yellow that recalls the approach of the wheat harvest of England; but here there are no undulations to break the dull uniformity of the outlook, no trim hedges, no variety of crops. All is one dead level away to the horizon. It is very little more picturesque in the uplands. Among the hills the *taungya* patches are conspicuous; but unsightly blackened tree-stumps stand up out of the grain, and there is an air of desolation and unkemptness about the clearings that nothing in the way of colouring or surroundings can redeem.

Jowār or millet (*Sorghum vulgare*) is the main subsidiary food-crop in the dry zone of Upper Burma. In some of the arid upland tracts this grain takes the place of rice as the ordinary food of the household; but ordinarily it is not regularly eaten, and is often grown simply as fodder for cattle. There are two main varieties of millet: the *kunpyaung* which has a husk, and the *sanpyaung* which has none. The plant, which is not unlike maize, grows to 8 or 10 feet in height. It is sown on all descriptions of *ya* land in July and August, and is cut towards the end of the cold season. There was a large export of *jowār* to India during the recent famine years.

Sesamum (*hnan*) is for the most part, like millet, essentially a dry area crop. There are two distinct sesamum harvests, that of the early sesamum or *hnanyin* and that of the late sesamum or *hnangyi*, the former being more generally grown. The latter is sown towards the close of the rainy season and reaped during the cold season, while the *hnanyin* is gathered during the rains. The plants, when mature, range in height from 2 to 5 feet and bear white flowers. Sesamum is cultivated for the sake of the seed, which yields an oil much affected by the Burman in cooking. Oil-presses on the pestle-and-mortar principle, usually worked by bullocks, are common in the majority of the villages where sesamum is grown.

Of the *kaing* or riverain crops none is more conspicuous than maize (*pyaungbu*), which carries glossy green foliage and rises to a considerable height, either alone or in conjunction with a form of climbing pulse, the growth of which its stalks materially assist. The maize cob is

largely eaten green, as a delicacy, and the husk or sheath when dried is used for the outer covering of Burmese cheroots. Its stalks, like those of *jowār*, are excellent fodder for cattle. It is sown as the water falls and is cut during the dry season.

Of peas and beans, which are also the product of river land inundated during the rains, there are numerous varieties, of which some of the best known are *pegyi*, *pegya*, *matpe*, and *sadawpe*. The sowing of this form of *kaing* crop takes place in October, and the harvest is gathered just before the hot season begins. There is a considerable export of *pegya* (*Phaseolus lunatus*) to Europe for cattle fodder.

Cotton is grown systematically only in certain special tracts of the dry zone. It is sown on high land, as a rule, early in May, and picking commences about October and is continued at intervals till the end of the year. In Thayetmyo District picking appears to be continued up to a later date than in Upper Burma. The cotton is short-stapled as a rule. It is cleaned locally, either by hand or in cotton-ginning mills, and sent to both China and India.

Tobacco is ordinarily sown in nurseries on inundated alluvial land in September and October, and planted out in December. The crop is one that needs careful attention; and weeding, pruning, and hoeing are constantly necessary. In March and April the leaf is ready for picking. It is then plucked, roughly pressed, and dried in the sun, but no regular curing operations are undertaken. The stalks are used for smoking as well as the leaves. It is grown solely for local consumption.

A level black soil known as *sane* is the best soil for gram and wheat. Both crops are grown on alluvial land, and are sown at the close of the rainy season and harvested at the beginning of the hot season. Wheat, which in Burma is of the bearded kind, is grown only in a few limited tracts in the dry zone; the cultivation of gram is more widespread.

Throughout the dry zone the toddy-palm (*Borassus flabellifer*) is a feature of the landscape, and the tapping of this useful tree affords employment to a large proportion of the residents of the Districts in which it grows. Tapping commences in February and continues till July. The juice when extracted is either fermented and made into *tāri*, or is boiled down into molasses or jaggery (*tanyet*). The leaves are used in the dry zone for thatching purposes.

Among the other products of the country may be mentioned chillies, pumpkins and gourds, betel-vines and the areca-nut, sugar-cane, and onions. Plantains are successfully cultivated on a small scale in nearly every village, and on a larger scale in specially suitable tracts; mango-trees abound, though, except in the neighbourhood of Mandalay, the fruit is not as a rule of any exceptional quality. Prome has long been famous for its custard-apples, and the southern portion of the Tenas-

serim Division has achieved a local notoriety for its mangosteens and durians. Pineapples are common, and are cultivated in enormous quantities in the immediate neighbourhood of Rangoon. Oranges of good quality are grown in Amherst, in the Shan States, and in Toungoo. Tea-growing is systematically practised in the Shan States by the Palaungs; but the industry has never been able to attract European capital, and is still conducted on purely native lines. Coffee has, on the other hand, been worked on the Ceylon and Indian systems, and was very successful in Toungoo District until attacked by leaf disease. Opium is grown freely in portions of the Shan States, but the drug is extracted almost solely for home consumption. There is no regular cultivation of fibres on a large scale, though the forests of the Province abound in *shaw* and other fibrous products. *San*-hemp is, however, grown to a considerable extent in Tavoy.

The average yield in cwt. per acre of the principal crops of Burma is as follows :—

Crop.	Average yield in cwt.
Lower Burma rice (unirrigated) . .	11
Upper Burma rice (irrigated) . .	11
,, ,, rice (unirrigated) . .	9
,, ,, wheat	5
,, ,, *jowār*	4
,, ,, gram	5
,, ,, sesamum	2
,, ,, cotton	80 lb.

Ploughs and harrows are used for breaking up the soil and preparing it for the reception of seed. Ploughs (*te*) are either of wood, or of wood and iron, chiefly the latter; harrows (*tundon*) are almost invariably of wood only. The latter consist of a single pole or bar with teeth of cutch or *padauk* wood fixed at intervals along its length. They are heavy and cumbrous, and receive the additional weight of a man who stands upon the implement in its progress across the soil. A primitive kind of roller or clod-crusher (*kyandon*) is used in Upper Burma and in portions of the Lower province, where it is known as *setdon*. Various forms of knives and sickles are used for reaping, weeding, and the like. They are all straight or slightly curved; the sickle of English husbandry with a semicircular blade has not yet found general favour. Hoes and mattocks are employed extensively for agricultural purposes, the purest indigenous form being the *tuywin*, a spud-like implement with a straight shaft and a small slightly concave blade, of little use except for digging holes and grubbing up weeds. Threshing is not as a rule done by hand. The grain is trodden out by cattle; winnowing is carried out with the aid of trays of woven bamboo; and paddy is ordinarily husked in wooden mortars, the pestle consisting of a block of

wood at the end of a heavy bar working on a lever, which is raised and lowered by the weight of the operator's body as he steps on and off the farther end of the bar. The Burman's conservative tendencies are nowhere more apparent than in his dealings with the soil, and the introduction into the country of novel agricultural appliances is slow. The greater proportion of the cultivator's implements are still eminently primitive, and are not likely to alter materially in character for some time to come.

Cow-dung is used to a certain extent for manure in some Districts, but the labour involved in carrying the manure from the cattle-pens to the fields appears to be an insuperable obstacle in the way of manuring on a methodical and uniform system. As a rule the nurseries receive most attention when any manuring is done. The only other measure taken to fertilize the paddy-fields is to burn the stubble during the dry season and to leave the ash to enrich the soil.

In Lower Burma, where there is only one main crop of importance and the soil is extraordinarily fertile, the question of rotation of crops is not one which concerns the agriculturist to any appreciable extent. In Upper Burma, on the other hand, and especially in the dry zone, experience has taught the husbandman that there is a limit to the recuperative power of much of the non-inundated land; that some crops exhaust the soil more than others; and that regard must be paid to this fact in cropping the poorer classes of fields. Sesamum, for instance, absorbs an exceptional quantity of nourishment from the soil, and is not generally grown two successive years on the same land. In some cases two fallow years are allowed after a sesamum year, in some more. Occasionally *jowār* or cotton or both take their turn before the fallow period commences. In better kinds of soil sesamum and *jowār* are cropped in alternate years. In the *sane* (black soil) tracts wheat and gram alternate to a certain extent, and millet often succeeds cotton before a fallow. As a rule, however, even where conditions demand an economical system of rotation, the order of tillage observed is more or less haphazard and the most is not made of the properties that the soil possesses.

The average area of a holding differs very greatly from District to District and tract to tract. The mean for Meiktila District is 7·7, that for Sagaing rather over 12 acres. In Pegu, in 1900, the average area of rice-land holdings was 26 acres, or more than double the Sagaing average. In certain localities, as, for instance, in Prome and Kyaukpyu, it is even lower than in Meiktila; and looking at the Province as a whole, and having regard to the numerical strength of the agricultural community and the area under cultivation, it would probably be safe to say that the general average falls between 10 and 15 acres.

The total area under crop in 1903–4 amounted to 19,680 square

miles, being 50 per cent. larger than that cropped ten years earlier. A portion of this increase must be attributed to more accurate surveys, but even so the growth is still substantial. In Lower Burma extension of cultivation was large in 1892–3; in 1893–4 it was less marked; while cattle-disease, and low prices induced by a paddy ring, sent the area cropped in 1894–5 down to more than 235 square miles below the previous year's figures. Since these years of depression, however, prices have ruled high, and the growth of cultivation in the Lower province has been calculated at the rate of 375 square miles per annum. In Upper Burma there has been a steady rise in the area under cultivation since the early post-annexation days, with only temporary decreases, owing to deficient rainfall, in 1895–6 and 1901–2.

The area under rice in 1903–4 was 14,540 square miles. Rice now covers over two-thirds of the cropped area in the whole of Burma, and in Lower Burma it forms more than eleven-twelfths of the total. Thus the history of the increase or decrease of cultivation generally is in Burma to all intents and purposes a history of the growth or shrinkage of the cultivation of rice. *Jowār*, gram, sesamum, sugar-cane, cotton, and tobacco all show increases. Maize, on the other hand, would seem to be declining in popularity. *Jowār* showed a total of 1,633 square miles in 1903–4, representing an increase of 78 per cent. since 1894. In the case of sesamum the ten years in question have seen a growth of no less than 128 per cent. in the cropped area. On the whole, recent years have been favourable to the crops in both sections of the Province, and have enabled the cultivators to extend their holdings and clear available waste ground; while scarcity in India has afforded a ready market for agricultural produce, notably food-grains.

The advantages of improvements in quality by a careful selection of seed have not been wholly lost sight of in the Province; but where high prices are obtainable in the market for produce of almost any class, quantity rather than quality is the improvident husbandman's first and often his only thought. The Settlement officer of Prome wrote in his *Revision Settlement Report* (season 1900–1):—

'As a rule the seed paddy is merely taken from the store of *wunsa*, but in one *kwin* near Shwedaung a holding in an unpromising situation was found to be giving an unusually heavy crop, which the cultivators explained was due to the use of specially selected hand-picked seed grain. It is possible that this is not a solitary case, but no other happened to come to light.'

It is to be feared, however, that forethought such as this is likely to be the exception with the Burman for many years to come.

The Agricultural department is doing its best to turn the indigenous cultivator from his attitude of passive distrust towards untried agricultural methods and new products. Ground-nuts, tobacco (Havana and

Virginia seed), wheat, Egyptian cotton, and potatoes are crops the introduction of which it is sedulously fostering; but so far, except perhaps in the case of potatoes in the Shan States and ground-nuts in Magwe, the result of the experimental cultivation has not been altogether encouraging, for the operations are too often conducted half-heartedly by the villagers concerned. In time, some of the new products will no doubt gain a footing in the country. Agricultural shows are held annually throughout the Province at suitable centres. They are popular, but their usefulness, like that of experimental cultivation, has yet to be appraised at its full worth by the people. There are no model farms, but experimental gardens are maintained by Government at Taunggyi, Falam, Myitkyinā, Kathā, Simā, and Sinlumkabā in the Upper province. The position of private tenants is, generally speaking, good; but measures are needed to improve their condition and to relieve them from indebtedness, and a Tenancy Bill, framed to secure these objects, is at present under consideration. Steps have been taken in Upper Burma to prevent the leasing of state land to persons other than bona fide agriculturists.

Small use is made of the Land Improvement Loans Act, 1883, in Burma, but loans under the Agriculturists' Loans Act, 1884, are common. During the years 1890–1900 the total of advances made under the latter enactment averaged about Rs. 41,000 per annum in Lower, and 2,13,000 in Upper Burma. Advances are made by Government, through the local officers, to deserving villagers on the security of the village headman or of fellow villagers. The rate of interest demanded is 5 per cent. per annum, having been reduced to this figure from $6\frac{1}{4}$ per cent. in 1897–8, but a proposal to raise it again is under consideration. The present rate is far below the lowest interest that cultivators would have to pay on money borrowed from private individuals. The period for repayment is ordinarily two or three years. Money-lenders in Burma are sometimes recruited from the agricultural community itself. They are ordinarily either Chettis from Madras, whose rate is from $1\frac{3}{4}$ to 5 per cent. a month, or Burmans, whose demand is at times even more exorbitant. Thus in some Districts the Government loans are eagerly sought after, though in others the formalities that have to be gone through before the cash reaches the cultivator's hands and the rigid rules under which recoveries are effected often deter applicants from availing themselves of the loan rules. The popularity or otherwise of the advances depends to a large extent on the efforts made by the local officers to commend them to the agricultural community. Recoveries are made without great difficulty; and though occasionally it is found that applications have been made for other than bona fide agricultural purposes, this is the exception and not the rule. The total of irrecoverable sums is small. Steps have recently been taken to

introduce the system of co-operative credit among the agriculturists of the Province. Under the provisions of the Co-operative Credit Societies Act (X of 1904) the people have been encouraged to start small societies, the members of which (usually from 30 to 50 in number) join together and subscribe a capital. Sums ranging from Rs. 1,000 to Rs. 4,000 are thus obtained, and to this Government adds a loan of a similar amount free of interest for the first three years and afterwards at 4 per cent. The combined amount is lent out among the members of the society at 1 per cent a month, and the profits go first to the formation of a reserve fund. When this has been built up, they will be devoted to bonuses to members. During the first four months of 1905 eight rural societies (four in Upper and four in Lower Burma) were established; and at the end of May of that year they numbered 404 members, who had subscribed a capital of Rs. 12,160, to which Government had added Rs. 11,560 in the shape of a loan. The movement is at present in its infancy, but the progress so far has been encouraging.

Burmese cattle are of a type peculiar to Burma and other portions of Indo-China. Small, but sturdy and well set up, they are exceedingly docile and for their size possess considerable powers of endurance. Their hump and dewlap are less developed than in Indian beasts, and their horns are comparatively small. They are bred by the Burmans almost solely for draught purposes, and by the Shans for caravan traffic, not professedly for food nor ordinarily for dairy purposes, for the tenets of Buddhism proscribe the taking of life, and the use of milk and butter is only beginning to be recognized by the people of the country, in whose eyes to rob the calf of its natural food used to be almost as reprehensible an act as to eat its mother's flesh. Religious scruples in this regard are being gradually broken down; but the Burman's faith has left an indelible impression on the treatment of his cattle, which, except perhaps in Arakan, are infinitely better cared for than the sacred drudge of the average Hindu ryot. In some Districts a light-built breed of bullocks is used for cart-racing. Cattle are ordinarily driven out to graze early in the day and return to the villages at nightfall. Some of the animals are housed under the dwellings of the villagers amid the piles on which they are erected, others are tethered in a shed close by the house. The diseases to which the cattle of the Province are most liable are rinderpest (*kyaukpauk*), foot-and-mouth disease (*shana kwana*), anthrax (*daungthan* or *gyeikna*), dysentery (*thwe thun wun kya*), and tuberculosis (*gyeik*). Of these, the first claims the largest number of victims. Cattle-disease is kept under as far as possible by a staff of veterinary assistants whose duty it is to visit affected areas. Segregation is enforced. Outbreaks of infectious disease have to be reported to the civil authorities, and in Lower Burma all deaths of cattle are recorded and the death returns are collected by the police. In Rangoon full use is made of the

provisions of the Glanders and Farcy Act of 1879. The price of cattle varies considerably. An ordinary pair of working bullocks may be purchased for sums varying from Rs. 120 to Rs. 150, but well-matched and powerful beasts will often fetch as much as Rs. 150 each. The price of cows ranges from Rs. 30 to Rs. 60. Buffaloes are used for ploughing and other draught-work, more so in the wet than in the dry Districts of the Province. For heavy and laborious work they are excellent and cost little to keep, for they subsist for the most part on what they find on the grazing-grounds. An ordinary pair of buffaloes may be purchased for from Rs. 150 to Rs. 200, though more is demanded for an exceptionally good pair.

The Burmese pony is small, its height ranging from 11 to 13 hands. It is very hardy and active, but hard-mouthed and often of uncertain temper. The so-called Pegu pony is well-known in India, but Major Evans, A.V.D., Superintendent of the Civil Veterinary department of Burma, throws doubt upon the theory that there was a separate Pegu breed. He wrote as follows in the *Annual Report* of the Provincial Civil Veterinary department for the year 1899–1900 :—

'Burma never, as far as I can ascertain, was a horse-breeding country. Certainly ponies, and some good ones, were bred in Lower Chindwin, Pakokku, Myingyan, and Shwebo, but even in Burmese times the supply was from the Shan States. We hear much of the so-called Pegu pony, as if a special breed of ponies existed in Pegu. There is not now, nor, so far as I can find out, ever was such an animal. The justly celebrated Pegu ponies were Shans, imported from the States, possibly via Shwegyin and Toungoo.'

The Shan States are still the main centre for pony-breeding in the Province, though good beasts are to this day bred in the Upper Burma Districts referred to by Major Evans. There is a small stud of Government stallions, but breeding operations have so far been attended by no great measure of success. The price of Burmese ponies varies, and has risen considerably during the past twenty years. The cost of a fair pony for ordinary purposes may be anything between Rs. 150 and Rs. 300. Racing ponies naturally command fancy prices.

Sheep and goats are bred to a small extent (mostly by natives of India), the former especially in the dry zone. A small breed of sheep is imported into Bhamo District from China. The average price of this Chinese variety is about Rs. 5. Indian sheep run to a somewhat larger figure, the maximum being sometimes as high as Rs. 12. The price of goats is about the same as that of sheep. Pigs are eaten freely by the Chins, Karens, and other hill tribes, and pig-breeding is carried on by Burmans as well as by Chinamen in certain localities. The price of pigs in Sagaing District, which may be looked upon as a typical pig-breeding area, ranges from Rs. 10 to Rs. 40 a head.

The area of uncultivated land in the Province is still so extensive that the provision of grazing-grounds has never been a matter of urgent importance; and in the dry zone of Upper Burma, where there are enormous stretches of land too poor for cultivation but suitable for grazing, the question is never likely to be pressing. Care has, however, been taken to provide for a future when cultivation may have spread to such an extent as to render the grazing problem a real one, and fodder reserves have been selected and demarcated. The matter is one to which special attention is directed when a District is being brought under settlement. Except in the dry zone, no special difficulties are encountered in providing food for cattle. In the dry Districts chopped millet stalks are largely used for fodder during the hot season, when vegetation is at its lowest ebb. In specially unfavoured tracts the water difficulty assumes serious proportions. In his *Summary Settlement Report* (season 1899–1901) the Deputy-Commissioner of Myingyan wrote as follows:—

'In parts of Kyaukpadaung and Pagan during the hot months, when the tanks are dry and people fetch their water daily, often from a distance of 6 miles, the cattle fare very badly, and it is quite common to find them being herded 15 miles from water. At this time they are watered only every other day, and sometimes even only once in three days. The condition of the cattle at this time is terrible, and many die on the long road between fodder and water.'

This state of things is, however, fortunately the exception.

There are in Burma no regular fairs at which live-stock are collected for sale as in India. Opportunity is, however, occasionally taken of the gatherings at pagoda festivals and the like to do business in cattle or other animals. The annual festival at Bawgyo in the Hsīpaw State, for instance, is usually made the occasion for a pony mart.

In Lower Burma, Prome and Thayetmyo Districts excepted, the heavy rainfall renders systematized irrigation operations unnecessary even for the culture of so exacting a crop as rice. The depth of water in the paddy-fields has to be carefully regulated, but an excess is without difficulty drained off through a temporary breach in one of the enclosing embankments, known as *kazins*; and if at any time the emptying has been injudicious, and a field is momentarily in need of an extra supply of water, that supply will nearly always be available near at hand, and is admitted either by gravitation from an adjacent higher level or by lifting in a flat bamboo water-scoop. Thirsty crops, such as betel-vines, onions, durians, and oranges, are watered by hand.

In Upper Burma the case is widely different. In Myitkyinā, Bhamo, and the other northern Districts, it is true, the climatic conditions differ but little from those obtaining in the north of Lower Burma; but farther south it may be laid down as a general rule that, except in a few

favoured tracts, rice cultivation can be carried on successfully only with the aid of a supply of water rendered available by artificial means and capable of being drawn upon at any time between seed-time and harvest. Other crops also need artificial watering, but it is only on behalf of rice cultivation that regular irrigation works are undertaken. The provision of a water-supply of the kind required has been recognized as a matter of vital interest in Upper Burma from time immemorial; and among the legacies bequeathed to the British by the Burmese government in 1886 not the least important were a number of irrigation works, for the most part damaged or useless, but valuable, if for nothing else, for the lasting testimony they bore alike to the needs of the people and to the responsibilities of their rulers. Of these, the most ambitious were the Kyaukse and Minbu irrigation systems, the Meiktila Lake and the Nyaungyan-Minhla tanks, and the Mu and Shwetachaung canals. In 1892 a Public Works Irrigation circle was formed in Upper Burma, not only to improve such of these larger systems as it was thought fit to preserve, but to put in order the host of minor village irrigation works that are scattered, in the shape of tanks and irrigation channels, through the greater part of the dry zone. The work undertaken has included projects for, and the construction of, new canals from loan funds, in addition to the remodelling, extension, and maintenance of old irrigation systems with funds provided from Provincial revenues. The only completed work of the class known as 'major' is the MANDALAY CANAL, opened in 1902, which is 39 miles in length, cost about 51 lakhs, and is capable of irrigating 89,000 acres. It waters much the same country as a canal dug by the Burmans before annexation, which proved a failure owing to faulty alignment and the inability of the Burmans to deal with the severe cross-drainage from the Shan plateau. The Shwebo Canal, another 'major' work which will benefit an even more extended area, is in course of construction [1], and will probably cost about 52 lakhs. There was a Shwebo canal before annexation, but the new work does not follow the line of its predecessor, which, however, still performs useful functions. The construction of two canals, in connexion with the Mon river in Minbu District, has been started, and two more canals, the Ye-u and the Yenathā, are in contemplation; when completed they too will be 'major' works. The great majority of the Government irrigation works in Upper Burma are, however, what are known as 'minor' works. They are practically all adaptations of pre-existing native schemes, and for this reason only revenue accounts are maintained for them. They consist partly of canals, partly of tanks. The canals are mostly in Kyaukse, Mandalay, and Minbu Districts; some of these are under the maintenance of the ordinary local officials, but the majority are kept up by the Irrigation department. The most important of the tanks main-

[1] This canal was opened in 1906.

tained by the department are the Kanna tank in Myingyan District, the Meiktila Lake and the Nyaungyan-Minhla tank in Meiktila District, and the Kyaukse tank in Yamethin District. Scattered over the dry zone are a considerable number of small village tanks, constructed locally, for the management of which the department does not hold itself responsible. No revenue is paid for water supplied from these small indigenous works. At the end of the year 1903-4 the total area irrigated by 'minor' Government irrigation works amounted to 430 square miles.

Revenue, on account of water supplied from Government irrigation works, is levied in the shape of water rate, which varies in different localities, and which, on land cultivated with rice, ranges between R. 1 and Rs. 5-8 per acre. In settled Districts the water rate is included in the land revenue; in unsettled Districts it is assessed separately and is levied only on non-state land irrigated from Government works. The total collections of separate water rate in 1903-4 amounted to Rs. 24,423. Government canals and tanks are ordinarily in charge of the Executive Engineer. The carrying out of urgent repairs to Government irrigation works constitutes a public duty which villagers in the vicinity of the works are liable to be called out to perform. A similar duty devolves upon the residents in the neighbourhood of the embankments which, in the delta Districts, have been built to protect low-lying areas from excessive inundation by the rivers.

Until quite recently no revenue had been obtained from the 'major' irrigation works of Upper Burma, but the Mandalay Canal has now begun to pay. Up to the end of 1903-4 the total expenditure on works of this nature had amounted to 81 lakhs, of which 50 lakhs were in respect of the Mandalay and 30 lakhs in respect of the Shwebo Canal. No reliable irrigation finance figures are available for the first few years succeeding the annexation of the Upper province. During the ten years ending 1901 the average annual expenditure on 'minor' Government irrigation works of all kinds in Upper Burma was 9 lakhs, and the corresponding receipts amounted to 10·8 lakhs; the average net profits for each year of the period in question may accordingly be taken at nearly $1\frac{3}{4}$ lakhs. In 1903-4 the expenditure on these 'minor' irrigation works was 9·98 lakhs, and the gross receipts from the same 9·35 lakhs.

The only Government irrigation channel that is used for navigation is the Shwetachaung Canal in Mandalay District. On this tolls are levied on boats and timber.

In Lower Burma the only works having the same main agricultural objects as the irrigation works of the Upper province are the embankments in the delta of the Irrawaddy and Sittang, designed to guard the crops from the ill-effects of an overplus of water. In 1900-1 the total area protected or benefited by these works was 925 square miles. The working expenses incurred in connexion with these works during

the same year amounted to 3·4 lakhs, and the share of the land and other revenue credited to them was 13·56 lakhs, the net revenue thus amounting to 10·2 lakhs, which represents 75 per cent. of the gross receipts. In 1903–4 the corresponding figures of expenditure and revenue were 4·8 and 16·1 lakhs respectively.

Tanks, wells, and canals are the ordinary indigenous means of irrigation in the Province. Water-wheels (*yit*) are used here and there on the banks of rivers; and there are other forms of water-lifts, of the trough, basket, or scoop type, known by different names, such as *ku*, *kanwe*, or *maunglet*. These latter are all worked by hand. A certain measure of engineering skill appears to have been devoted in Burmese times to the construction of canals. The village tanks already referred to are rough, very often consisting merely of a mass of earthwork thrown across the lower end of a well-defined catchment area; but as a rule they are judiciously selected, and can often be converted with the help of a little trained engineering skill into suitable irrigation works. There are wells in nearly every village, but as a rule they supply water solely for drinking and washing. Such wells as are dug for agricultural purposes are ordinarily found in the vicinity of betel-vine yards or fruit gardens. A rough well of ordinary depth can be dug for about Rs. 25. The cost of a *pakkā* or brick-lined well is a good deal higher, and ranges, according to the depth, between Rs. 150 and Rs. 500.

So far as can be ascertained, the aggregate area irrigable by existing Government irrigation works of all kinds amounts to about 1,280 square miles.

Fisheries.

The fisheries of Burma are important financially and otherwise. From time immemorial the exclusive right of fishing in certain classes of inland waters has belonged to the Government, and this right has been perpetuated in various fishery enactments, the latest of which is the Burma Fisheries Act of 1905. Fishing is also carried on along the coast, but the sea fisheries absorb but a small portion of the industry. Most of the fishermen labour in the streams and pools, which abound particularly in the delta Districts. The right to work these fisheries mentioned in the enactments alluded to above is usually sold at auction, and productive inland waters of this kind often fetch very considerable sums. River fishing is largely carried on by means of nets, and generally yields revenue in the shape of licence fees for each net or other fishing implement used. Here and there along the coast are turtle banks which yield a profit to Government. In the extreme south the waters of the Mergui Archipelago afford a rich harvest of fish and prawns, mother-of-pearl shells and their substitutes, green snails and trochas, shark-fins, fish-maws, and *bêche-de-mer*. Pearling with diving apparatus was introduced by Australians with Filipino and Japanese divers in 1893. They worked mainly for the

shell, it being impossible for them to keep an effective check on the divers as regards the pearls. After about five years, when the yield of shell had decreased, they all left. The industry is now carried on by natives.

Rents, wages, and prices.

In Burma the prevailing form of land tenure is that known as *ryotwāri*. As a general rule the agriculturist is a peasant proprietor, who makes all payments in respect of the land he works directly to the state. Under native rule, with a few exceptions, the original occupier of all land in Lower Burma obtained an almost absolute title to his holding subject to the payment of revenue; but, though their early codes go to show that the people of the country originally possessed what at first sight would seem to be an allodial right of property in land, there is evidence to indicate that their interests were of a subordinate nature, and the fact that in certain circumstances abandonment of cultivation entitled the crown to claim a holding, proves that the ryot's tenure, while carrying with it the outward powers of a proprietor, was strictly limited in the interests of the state.

In Lower Burma the main principles of land tenure were continued unchanged after the country had become a British possession, and were not defined by special legislation until many years later. In Upper Burma, on the other hand, a different land policy was introduced when land revenue legislation was first undertaken, less than three years after the annexation of the province. The proprietary ownership of waste land, i.e. of land which had been hitherto unoccupied for the purposes of cultivation, or which had been so occupied and had subsequently been abandoned, was held to be vested in the state; and the Government asserted rights of ownership, inherited from the Burmese State, in islands and alluvial formations, in land previously termed royal land, and in land held under service tenures. Land coming within these categories formed a comparatively small proportion of the cultivated land of the province. Existing tenures remained, and still remain, undefined in respect of the greater part of cultivated land commonly called private land. Under both the Upper and the Lower Burma systems, however, the small peasant proprietor dealing direct with the state was the prominent figure in the revenue system, and it has thus come about that in Burma the relations between landlords and tenants have never assumed the prominence that they hold in *zamīndāri* Provinces. In 1881 tenants in Lower Burma were few in number; but in 1892 the Memorandum on the moral and material progress of the country during the preceding decade referred to the existence of a considerable and growing class of tenants in the Lower province, and gave an outline of this new trend of affairs:—

'This class is recruited mainly from persons who have formerly been landholders, have run into debt, and have in consequence had to part

with the ownership of their holdings and occupy them as tenants. Many tenants, particularly in the delta of the Irrawaddy, are immigrants from Upper Burma and young men setting up house. Although a precise estimate cannot be made of the extent to which land is being, year after year, transferred from its original owners, it is certain that such transfers are now frequent in the neighbourhood of large trading centres, and that the area of land cultivated by persons in the condition of tenants, who have no statutory rights and pay rent to middlemen, is extensive and on the increase.'

In 1903–4 the total area let at full rents was 3,445 square miles. The same condition of things prevails, though to a less degree, in Upper Burma in connexion with *bobabaing* or non-state land. Full data regarding the area rented are not, however, available for the Upper province.

Rent is ordinarily paid in produce, taking the form of a proportion of the gross out-turn of the land leased. Cash rents exist, but at present they are the exception. In Lower Burma, in 1899–1900, only 3 per cent. of the total area rented was let at cash rents. It is somewhat difficult to say what conditions precisely determine the rent paid by the actual cultivator to his immediate landlord. In Upper Burma disinclination to move to a strange neighbourhood will frequently lead a stay-at-home cultivator to work land at a rent that leaves him the barest pittance to exist on; while a husbandman, with more land than he can work himself, will often be content to make over the use of his more distant fields for an abnormally minute share of their produce, indeed sometimes for practically nothing, if he has any fear that a temporary abandonment of non-state land may lead to its classification as state land. Within these extremes practice is ordinarily regulated by a blind adherence to local custom, which has decreed what proportion of the produce is to be regarded as a fair and proper rent for each kind of crop on each class of soil. In Lower Burma rent is based more on practical considerations, but it is doubtful whether it bears as yet any close relation to what experience has shown to be the actual selling value of land of similar quality in the neighbourhood.

Custom in Upper Burma has decided that the amount of produce paid as rent shall be more or less regulated by the proportion of the cost of cultivation borne by the tenant. Tenancies have here been defined as of two kinds: simple, where the tenant bears the whole cost of cultivation; and partnership, where the landlord contributes towards the expenses. Simple tenancies may be of different kinds. The rent may be fixed (*asu-the* or *asu-pon-the* tenancy), or it may be a share of the actual out-turn (*asu-cha*), or it may consist merely in the payment of Government dues. Of these the second is by far the commonest form. Partnership tenancy is known as *asu-konpet*. Partner landlords supply the seed-grain as a general rule, their further contributions to the cost of cultivation varying in different localities. The rent ranges between one-half and one-

tenth of the gross produce. Leases are ordinarily for a year only in Upper Burma; in Lower Burma they are often for a longer period. The partnership tenancy system is not common in the Lower province.

Rents have had an upward tendency for many years in Lower Burma. The average rent per acre in 1890 was equivalent to Rs. 5. By 1895 this average had risen to Rs. 6·7, and by 1900 to Rs. 8. The following figures show the average rents per acre, in rupees, in each of the Divisions of Lower Burma in 1890 and 1900:—

	1890.	1900.
Arakan	4·2	7·5
Pegu	5·7	8·5
Irrawaddy . . .	5·1	7·8
Tenasserim . . .	...	8·2
Average for Lower Burma	5·0	8·0

This represents the value of the produce rent on rice land converted into cash at the current market rates. Upper Burma rent statistics are incomplete, but it is clear that in parts of the Upper province rents are by no means low. In Kyaukse they are distinctly high, and in the Salin subdivision of Minbu the usual rent is half the gross produce.

Wages in Burma are high. Agricultural labour is less handsomely paid in the Upper than in the Lower portion of the Province, but even there wages are generally higher than in most places in India proper. Agricultural wages usually take the form of a small money payment in addition to food and lodging, and the total money value of the remuneration thus given seldom falls below Rs. 7 a month. An energetic able-bodied agricultural labourer can, in most of the Upper Burma Districts, reckon upon earning from Rs. 8 to Rs. 12 a month in money value. Cooly-work is paid for at a slightly higher rate than ordinary field-work. In Lower Burma field-labourers are paid during the field season at rates which not infrequently work out to an average of Rs. 15 a month for the whole year. Cooly-work proper is a feature only of the large industrial centres, and it is practically in the hands of natives of India, with whom Rs. 15 may be looked upon as a fair average monthly wage. Skilled labour is paid for at much the same rate in both portions of the Province. Domestic service is largely performed by natives of India; and the facts that Burma is to Indians a foreign country, and that the general standard of wages and hiring is higher than in India proper, have succeeded in keeping servants' wages about 50 per cent. above the Indian level. Household servants are paid from Rs. 10 to Rs. 30 a month. The clerical wage may be said to commence at Rs. 25 a month. Its maximum is about the same as in India. Artisans' wages fluctuate between Rs. 15 and Rs. 25 a month; and mechanics of very ordinary attainments are able to make as much

as Rs. 60, the better classes being capable of commanding even a higher figure.

Besides payment in the form of lodging and food, wages frequently take the form of remuneration in kind. For the whole nine months of the agricultural season in Lower Burma, the field-labourer usually receives 100 to 120 baskets of paddy; and a common payment for assisting in transplanting from the *pyogin* or nursery is a basket of paddy a day in addition to food, for so long as the job lasts.

Wages are regulated wholly by the demand for labour, and the lack of mobility displayed by non-agricultural labour in Burma is the reason for the difference in the wages prevailing in different portions of the Province. Scarcity, the extension of railways, and mining or factory operations, have not as yet had any marked effect on the average wage.

Rice is the staple food-grain of the country, and its price is affected by an almost endless variety of conditions. Speaking generally, and for the past twenty years, it has been quite exceptional for a rupee to purchase (retail) less than 10 or more than 20 seers of cleaned rice, the precise figure between these two extremes being determined in each District by the harvest, facilities of carriage, scarcity in India, internal disturbances, floods, revenue legislation, paddy rings, extension of cultivated area, and a host of other factors. The following table shows the average prices of rice, salt, and jaggery at important centres for the three decades ending with 1900:—

	Average for the ten years ending	Price (seers per rupee) at				
		Rangoon.	Moulmein.	Akyab.	Mandalay.	Meiktila.
Rice	1880	$11\frac{1}{2}$	$12\frac{3}{4}$	$15\frac{1}{4}$	...	...
	1890	$13\frac{1}{4}$	$12\frac{3}{4}$	$15\frac{1}{2}$	$11\frac{1}{4}$	...
	1900	$13\frac{1}{4}$	$12\frac{3}{4}$	13	11	$12\frac{1}{4}$
Salt	1880	$25\frac{1}{2}$	40	$28\frac{1}{2}$	...	...
	1890	$21\frac{3}{4}$	22	$28\frac{3}{4}$	$18\frac{3}{4}$	$12\frac{1}{2}$
	1900	$17\frac{1}{4}$	12	$12\frac{3}{4}$	$17\frac{1}{2}$	$13\frac{3}{4}$
Jaggery	1880	...	...	...	...	...
	1890	$4\frac{3}{4}$	$9\frac{1}{2}$	$4\frac{1}{4}$	$4\frac{3}{4}$	6
	1900	$7\frac{3}{4}$	9	6	$5\frac{3}{4}$	8

NOTE.—A seer is about 2 lb.

In 1903 the prices of rice in a few of the typical Districts of Upper and Lower Burma were as follows:—

Rangoon	17	seers per rupee,	about	26 lb.	for 1*s*.
Toungoo	11	,,	,,	,, 17	,,
Akyab	10	,,	,,	,, 15	,,
Mergui	$10\frac{1}{4}$	,,	,,	,, 16	,,
Amherst	$10\frac{1}{4}$	,,	,,	,, 16	,,
Mandalay	11	,,	,,	,, 17	,,
Bhamo	$11\frac{1}{2}$	,,	,,	,, 18	,,
Meiktila	$11\frac{1}{2}$	,,	,,	,, 18	,,

Apart from yearly fluctuations, due mainly to variations in the quality of harvests, there has been a slight but steady downward tendency during the last twenty years in the purchasing power of the rupee in regard to rice, which, in view of the enormous increase in the demand for the staple for export purposes, is not surprising. The only other food-grain of any importance in Burma is millet. It is eaten regularly in the poorer portions of the dry zone, but in other localities only when the supply of rice is insufficient for the requirements of the people. Its price in 1903 in two typical dry zone Districts of Upper Burma was :—

Mandalay .	29 seers per rupee, about 45 lb. for 1*s*.	
Meiktila .	20½ ,, ,, ,, 31 ,,	

The material condition of the people is better in Lower Burma than in the Upper province, where deficient rainfall or the lack of cultivable land in the vicinity of villages makes for a lower agricultural output and cuts down the profits of the husbandman. The financial advantages of the prosperous Lower Burma cultivator meet the eye less in his residence, household furniture, and ordinary dress than in his expenditure on food, ornaments, social ceremonies, and works of merit. There will be more silk waistcloths, anklets, and ear-plugs, more savoury accessories to the rice-bowl, and more festive gatherings in the rich farmer's house than in that of his poor neighbour; but the dwelling, and its fittings or lack of such, will be much the same in both cases, nor will any appreciable difference be noticeable between the outward circumstances of a villager cultivating his own land and of a landless day-labourer. The middle-class clerk, whose lines are for the most part cast in urban areas, will usually occupy a more pretentious building than the well-to-do agriculturist; his furniture and his everyday attire will be more elaborate; his jewellery will be more showy; his food will be richer; and his charities will be less. During the past twenty years the advance in the standard of comfort has been considerable among the town population.

An ordinary everyday costume of cotton jacket, cotton waistcloth, and silk *gaungbaung* or headkerchief costs from Rs. 3 to Rs. 5. A good jacket can be purchased for Rs. 1-8 and a cotton *longyi* or loin-cloth for Rs. 1-4. A single square of Japanese silk is enough for a headcloth, and its price is R. 1 or even less, but for a full *gaungbaung* two squares are ordinarily required. Burmese shoes can be bought at between R. 1 and Rs. 1-8 a pair. Silk waistcloths are worn on special occasions. They cost from Rs. 10-8 upwards.

Forests.

The forests of Burma may be conveniently classified as: I. *Evergreen*, comprising (1) littoral, (2) swamp, (3) tropical, (4) hill or temperate; and, II. *Deciduous*, comprising (1) open, (2) mixed, and (3) dry. The littoral forests are confined to Lower Burma, as are also, practically, the true swamp forests, while the

dry deciduous forests mostly occur in the Upper province. The other classes are common to the whole of Burma. The mixed deciduous forests yield most of the out-turn of teak. Large areas covered entirely with teak are however not known, and it is rare even to find forests where teak is numerically the chief species. As a rule it is scattered throughout forests composed of the trees common to the locality. The *in* forests, so well-known on laterite formation, belong to the open deciduous sub-class, while evergreen hill or temperate forests clothe a large proportion of the uplands of the Shan States. A considerable forest area in Burma is covered with a luxuriant growth of bamboo.

The littoral and swamp forests contain little timber that is of any present value. In the tropical forests the *kanyin* (*Dipterocarpus turbinatus*) and *thitkado* (*Cedrela Toona*) abound, while the *thingan* (*Hopea odorata*) and the India-rubber tree (*Ficus elastica*), with oaks and pines, are typical of the evergreen hill forests. The mixed forests contain, besides teak and *pyingado* (*Xylia dolabriformis*), the *pyinma* (*Lagerstroemia Flos Reginae*) and the *padauk* (*Pterocarpus indicus*). In the dry deciduous forests the tree most utilized is perhaps the *sha* (*Acacia Catechu*), which furnishes the cutch of commerce.

The forest area of the Province may be classified under two heads: 'reserved' forests, which are specially demarcated and protected, and whose produce remains entirely at the disposal of Government after satisfaction of the demands (if any) of right-holders; and public forest lands, which are freely drawn on for trade and agricultural requirements. For the Reserves, which are responsible for the timber supply of the Province, working-plans are compiled so that a sustained maximum yield may be forthcoming in the future.

The area of the 'reserved' forests is increasing yearly as exploration of the forests proceeds, and time and staff are available for settlement duties. In 1881 the Reserves were 3,274 square miles in extent; in 1901, 17,837 square miles. In the latter year the area of public forest land aggregated 81,562 square miles. No new Reserve is created until full inquiry has been made on the spot with regard to existing rights, domestic or agricultural; and this formal recognition of prescriptive rights has done much towards rendering the people less antagonistic to the restrictions which it is sometimes necessary to impose for the welfare and maintenance of the forest. Areas once 'reserved' may, should necessity arise, be disforested in the public interest; and in times of scarcity of food or fodder the Reserves are placed at the free disposal of the people and their cattle.

For administrative purposes the timber trees of Burma may similarly be divided into two classes, 'reserved' and 'unreserved.' The first includes teak, which is the property of Government wherever found, together with some eighteen other species to which this monopoly does

not extend. The second class includes all other trees. 'Reserved' trees can be cut only under a Government licence; 'unreserved' trees, on the other hand, may, outside Reserves, be utilized free of cost for the domestic and agricultural requirements of the people, but their produce is taxed when extracted for trade purposes.

Although the forests of Burma contain many valuable species of timber, some of which are largely used locally, teak is the only species in which an export trade of importance has yet been developed. The extraction of teak for trade purposes is carried out under the supervision of the Forest department, sometimes by means of Government agency, but chiefly by private firms under the system of purchase contracts. The annual yield in mature stems of a teak-bearing area is fixed for a term of years, and the given number of trees are annually girdled under the immediate control of a Forest officer. In the third year after girdling, when the timber has seasoned on the root, it is felled and logged. The logs are then dragged by buffaloes or elephants to the nearest floating stream, whence they ultimately reach deep water on one of the main rivers and proceed on their long journey to the seaports, where they are converted into beams and scantlings and shipped to the consumer. Years may thus elapse before a girdled tree comes on to the market, for its progress depends on the amount and frequency of the monsoon precipitations which cause the necessary flushes or freshes in the floating streams. In 1881–2 the out-turn of teak from Government forests in Lower Burma was 31,246 tons, while the exports from the Province, including teak received from outside the limits of what was then British Burma, amounted to 133,751 tons. In 1892–3 the exports reached a total of 216,186 tons, valued at 164 lakhs of rupees, and ten years later a total of 229,571 tons, with a value of 203 lakhs, was recorded.

The value of minor forest produce, including bamboos, utilized for trade purposes in Burma, has as yet reached no considerable amount. It stood at $4\frac{3}{4}$ lakhs of rupees in 1903–4. It must, however, be remembered that the inhabitants of the country receive all their requirements in forest produce free of royalty, and that transport difficulties are as a rule so formidable in the Province that at present it is not found to be remunerative to extract for export any but the most valuable forest products.

The protection and improvement of the state forests in Burma is entrusted to the Forest department. Systematic operations for the settlement of forest areas, for their demarcation, survey, and protection from fire, involve the annual expenditure of very large sums. At the same time the extension of the forest area under the more valuable indigenous trees is not lost sight of. *Taungya* cultivation of teak is a speciality of Burma forest management, and consists in permitting

shifting cultivation of cereal and other crops within Reserves, on the condition that teak seed is sown at the time of cultivation. The system is suitable to the requirements of the forest population, and has resulted in benefiting both the people and the forests. Plantations on an experimental scale of exotic species such as rubber and eucalyptus, &c., are also receiving attention, the object being to prove, if possible, that such projects are remunerative and so to open out a field for the enrichment of the country by private enterprise.

The following figures give the average annual financial results of forest management in Burma for the last two decennial periods ending with 1900, and also the figures for the year 1903–4:—

	Revenue.	Expenditure.	Surplus.
	Rs.	Rs.	R
1880–90 . .	26,20,700	12,52,700	13,68[illegible]
1890–1900 . .	60,84,200	19,80,600	41,03,600
1903–4 . .	85,19,400	35,00,300	50,19,100

The forest surplus may vary from year to year, being dependent chiefly on the amount of teak which reaches the seaports; but the out-turn available in the forest is calculated on the anticipated demand controlled by the estimated annual growth of the trees.

Mines and minerals.

The greater part of the as yet discovered mineral wealth of Burma lies in the upper portion of the Province. Petroleum is extracted in Arakan, and tin in Tavoy and Mergui Districts, but hardly anything in the shape of regular mining operations is carried on in the rest of Lower Burma. The principal oil-bearing areas are in the dry zone of Upper Burma; and gold, rubies, jade, amber, and coal have been discovered in paying quantities only north of the 22nd parallel of latitude.

Coal has been found in the Northern and Southern Shan States, notably near Lashio, not far from the Mandalay-Lashio railway, at Nammaw and in Lawksawk, as well as to the west of the Chindwin in the Upper Chindwin District, in Thayetmyo, in Mergui, and in Shwebo District. The Chindwin coal appears to be of the best quality yet found, and in the opinion of experts the coal area is fairly large and the supply likely to be considerable. Difficulties of communication have, however, prevented the Chindwin fields from being worked, though it is probable that the existing obstacles will be surmounted in time. The only coal-mines which have been systematically worked are at Letkokpin near Kabwet in Shwebo District, which were started in 1891, and taken over by a company in 1892. The coal has been used on Government launches, on the railway, and on the steamers of the Irrawaddy Flotilla Company. The out-turn in 1893 from the Kabwet or Letkokpin colliery was 9,938 tons. By 1896 it had risen to

22,983 tons, but it fell after this, and in 1903 was only 9,306 tons. The average number of hands employed in 1900 was 246. The coal was carried on a tramway from the mines to the river bank, and the average selling price was about Rs. 10 per ton. The mine has now, however, been shut down.

Iron is found in the Shan States, in Mergui, and elsewhere. It has nowhere, however, been systematically extracted and dealt with on European methods. Iron-smelting is a purely local village industry.

Gold is found in the beds of many of the streams of both Upper and Lower Burma, and the gold-washing of past generations has left its impress on the country in town and village names like Shwegyin, Shwedwin, and Shwedaung. It has been found in a non-alluvial form in Tavoy District; in the Paunglaung Hills to the east of the Sittang; in the Shan Hills, and in Kathā District. The Kyaukpazat gold-mine in the last-mentioned District was worked for several years, but the lease has now been surrendered. In 1900 a prospecting licence was granted for gold-washing within the bed of the Irrawaddy, from the confluence above Myitkyinā to the mouth of the Taping river in Bhamo District. That gold exists in paying quantities in Burma is indubitable. A good deal more money, however, is required for the successful exploitation of the metal than capitalists have as yet shown a disposition to invest. The gold-leaf used so largely for gilding pagodas in Burma comes for the most part from China.

Mogok is the head-quarters of the ruby-mining area of Upper Burma. The ruby mines are situated in the hills 60 miles east of the Irrawaddy, and about 90 miles north-north-east of the city of Mandalay. The stones are extracted partly by native miners and partly by the Burma Ruby Mines Company. The first lease to the company, granted by the Government in 1889, was for the extraction of stones by European methods, and for the levy of a royalty from persons working by native methods, and provided for the payment of a share of the company's profits to the Government. It expired in 1896, and was then renewed for a further term of fourteen years at a rent of Rs. 3,15,000 a year plus a share of the profits, the royalty system being continued. In 1899 a debt due by the company to the Government was written off and the annual rent reduced to 2 lakhs, while the Government share of profits was increased. By a lease running for twenty-eight years from April 30, 1904, the rent has been fixed at 2 lakhs, with 30 per cent. of the net profits. The system of extraction adopted is to raise the *byon* or ruby earth (found ordinarily some 20 feet below the surface) from open quarries, and to wash it by machinery similar to that employed in the South African diamond mines. The stones thus obtained are then sorted and the spinels are separated from the rubies.

The capital of the Ruby Mines Company stands at present at

£180,000. The company's establishment was in 1904 approximately 1,600 strong. Of this staff 44 members were Europeans and Eurasians, the rest natives of India, Shans, Chinese, Maingthas, and Burmans. Rubies are found in the Nanyaseik tract, in the Mogaung township of Myitkyinā District, and in the Sagyin tract of Mandalay District, but neither of these areas approaches the Mogok ruby tract in point of productiveness. The Nanyaseik tract is now practically deserted.

The richest oil-bearing tract of Burma lies in the valley of the Irrawaddy, in the southern portion of the dry zone of the Upper province, at about the 21st parallel of latitude. It has been worked by the natives certainly since the middle of the eighteenth century, but modern boring appliances were not introduced till 1889. The three principal centres of the petroleum-extracting industry are Yenangyaung in Magwe District and Singu in Myingyan District on the eastern bank of the Irrawaddy, and Yenangyat in Pakokku District on its western bank. The oil is obtained partly from wells dug by native labour, but mainly by a system of regular boring carried on by the Burma Oil Company, which purchases the bulk of the oil obtained by the native workers (*twinzas*), and pays a royalty to Government of 8 annas per 100 viss (365 lb.) in the case of the older leases and per 40 gallons in the case of the later ones. From the wells the crude oil is conveyed by pipes to tanks on the river bank, where it is pumped into specially constructed flats or floating tanks which are towed by the Irrawaddy Flotilla Company's steamers to Rangoon. Here it is refined in the Oil Company's works at Syriam and Danidaw. In 1903 the value of the Yenangyaung oil extracted was 36·4 lakhs, and of the Yenangyat oil 15 lakhs. The royalty on the output of petroleum was 4½ lakhs in 1901 and 8 lakhs in 1903. The Burma Oil Company has a staff of over 7,000 employés, of whom about 150 are Europeans and Americans. The Rangoon Oil Company works also at Yenangyat and Singu, and oil is won by the Burma Oil Company from the Minbu Oil Company's concessions. Petroleum is also worked in the Akyab and Kyaukpyu Districts of the Arakan Division, but the Arakan fields are not to be compared with those of the dry zone for richness. The total production of kerosene oil in Burma has risen from about 10 million gallons in 1893 to 83 million gallons in 1903.

Hitherto jade has been found in paying quantities only in the Myitkyinā District of Upper Burma. It is quarried in the hills during the dry months of the year by Kachins, and is purchased on the spot by Chinese traders, and by them transported in bulk by water and rail, for the most part to Mandalay, where the blocks are cut up. The purchase of the jade in bulk is a highly speculative transaction, as, till it has been sawn up, it is almost impossible to say how much marketable green jade a particular block may contain. Practically all the jade extracted finds

its way eventually into China. The right to collect the *ad valorem* royalty of $33\frac{1}{3}$ per cent. on jade-stone is farmed out by Government. In 1891 this right fetched Rs. 55,500. It was then sold annually, but a falling off in the amount paid rendered it advisable to extend the period of letting to three years. In 1899 the triennial lease fetched Rs. 60,350. The industry is not likely to pass out of native hands unless a fresh jade-bearing area is discovered.

Mergui District, in the extreme south of Burma, produces annually about 60 tons of smelted tin, and the neighbouring District of Tavoy about a ton. The methods employed are exclusively Chinese, but three European firms hold concessions. The industry has been carried on for thirty years without great success, and it has been said that much of the tin ore is of very low grade. The chief difficulties are the want of communications, and the fact that the tin-bearing tracts are everywhere covered with dense forest, which make their examination a work of much labour and expense.

The mines from which the amber of Burma is dug are situated beyond the administrative border of Myitkyinā District in the extreme north of the Province, where mining operations are conducted on a very small and primitive scale by the natives of the locality. It is possible that in former times the amber area was more productive than it is at the present day.

The production of salt is a purely local industry. Salt is obtained in small quantities by boiling along the sea-coast, as well as here and there in nearly all the Districts of the dry zone of Upper Burma; but as a rule it is bitter and of poor quality, and is unable to compete with the imported article. The local output of salt in 1900 was estimated at 415,000 cwt. For 1902–3 the estimate was fixed somewhat lower, for a modification in the system of levying duty resulted in the temporary closing of some factories, but 1903–4 showed a rise to 517,000 cwt.

Silver and lead occur in the Myelat division of the Southern Shan States, in the State of Tawngpeng in the Northern Shan States, and in the Mergui Archipelago; but their extraction has never assumed large dimensions. Alabaster, steatite, mica, copper, and plumbago, the last of poor quality, are also obtained in small quantities in portions of the Province.

The following is the out-turn of the principal minerals of Burma in the year 1903:—

Jade	1,402 cwt.
Rubies (value) . .	14,78,628 rupees.
Coal	9,306 tons.
Tin (ore) . . .	2,198 cwt.
Gold	1,397 oz.
Amber . . .	37 cwt.
Petroleum . . .	85,328,491 gals.
Petroleum (1890) .	4,641,308 gals.

Of domestic industries cotton-weaving is the most important and widespread. In 1901 the number of persons supported by cotton-weaving by hand was returned as 189,718, of whom the actual workers numbered 9,392 males and 136,628 females. This latter figure represents a fraction only of the total of women and girls actually engaged in cotton-weaving, for the great majority of those who wove solely for home consumption must have returned weaving, if at all, as a subsidiary occupation. The loom is a feature of nearly every house in certain localities; and in the past, before imported cloth began to compete with home-spun, its use must have been far more widespread than now. As it is, the foreign is slowly ousting the home-made article, and where home-weaving is still fairly universal more and more use is made of imported ready-dyed yarn. In fact, it is only in the cotton-growing areas of the dry zone that local thread is used in any quantities. There are no cotton-mills in Burma. Everything is woven on hand-looms.

Arts and manufactures.

Silk-weaving is a purely professional industry, though, like cotton-weaving, it is wholly the product of hand labour. The silk cloth woven is for sale, not, except in rare cases, for home consumption. The prospects of the silk-weaving industry have been damaged by the advent of cheap Manchester and Japanese silk goods, and the number of weavers in Sagaing and Mandalay, the head-quarters of the industry, has declined enormously of late years; but Burmese silk, where not woven of silk thread prepared and dyed in Europe, is still, by virtue of its texture and durability, able largely to hold its own. The Burmese silk is woven from Chinese silk thread, purchased raw and treated and dyed locally; but its comparatively sober hues fail to appeal to the average Burman as do the brilliant *acheik* and other cloths made of the gaudy silk thread of commerce. Silk is the attire of the well-to-do; and all but the very indigent, even when they ordinarily wear a cotton waist-cloth, have a silk *paso* (waistcloth) or *tamein* (petticoat) stored up for gala days. The head-gear of the people is almost invariably of silk. The locally made silk is too stiff for the *gaungbaungs* or headkerchiefs of the men, and for this purpose custom has pronounced in favour of the flimsy Manchester or Japanese squares that are obtainable in all the bazars of the country. The total number of persons supported by silk-weaving in 1901 was 34,029, of whom the actual workers numbered 5,973 males and 18,316 females. The Districts of Prome, Mandalay, Kyaukse, and Tavoy showed the highest totals.

Neither embroidery nor carpet-weaving exists as a widespread local industry. Cloth saddles are frequently decorated with patterns, and a near approach to embroidery is a form of *appliqué* work which consists in sewing figures of coloured cloth and spangles on to a dark cloth

background. Curtains of this work are known as *kalagas*. As a rule they are barbaric but effective.

Gold- and silversmiths and jewellers form a not unimportant section of the indigenous community. Workers and dealers in gold, silver, and precious metals, and their dependents, numbered 53,912 in 1901, the total of actual workers being 25,021. Silver jewellery is but little worn, but the better classes are profuse in their display of golden ornaments. Ear-rings (*nadaungs* and *nagats*), either of plain gold filigree work or enriched with jewels, are common; rings and bracelets of the same metal are popular gauds; children of well-to-do parents often wear gold anklets, and necklaces are affected by those of the fair sex who can afford them. Silver is mainly used for bowls and betel and lime boxes, the latter being occasionally of gold also. The making and designing of silver bowls has grown into what is probably the most attractive of the fine arts of Burma. The figures and patterns are executed, as a rule, in high relief, and the work, when well done, is singularly effective.

Of indigenous ironwork there is little that is not exceedingly primitive. Iron implements of a rough kind, such as *das* and axes, are manufactured in considerable quantities, but all the better kinds of cutlery and other hardware used in the Province are imported. The few iron foundries are almost all in Rangoon. Of the 26,221 workers and dependents shown in the census returns under the head of workers in iron and hardware, few can have been capable of executing anything more than the coarsest blacksmith's work. An exception must, however, be made in favour of the forgers of the inlaid knife-blades produced in Yamethin District, some of whose work is really meritorious.

Copper-working can hardly be said to exist in the Province. Brass-workers are fairly numerous (3,287 workers and dependents in 1901), though, as the Burman neither cooks in nor eats off brass, their total is a good deal smaller in Burma than it would be in an Indian community of corresponding numerical strength. Images of Buddha, bells, gongs, water-filters, spittoons, and bowls are the main products of the brass-worker's craft.

Practically all the indigenous cooking is done in earthen vessels, and the trade of the potter is widespread. The actual workers and dependents connected with the production of pottery in 1901 totalled 19,800, a small number considering the extensive use made of earthenware. Pot-making is, however, often a subsidiary occupation, combined with agriculture, and thus a large proportion of the potters were returned at the Census under their main calling. The ordinary pottery is rough and homely; but here and there, as at Pyinmanā, Myinmu, and Kyaukmyaung, glazed pottery is made which is not without a certain measure of artistic merit. Bricks are baked extensively, and brick-

making must have been a recognized industry in connexion with the building of pagodas for centuries past. The industry supported rather over 7,000 actual workers and dependents in 1901.

Lacquer-work is common, the Myingyan District of Upper Burma being the head-quarters of the industry. The lacquer, the basis of which is the gum of the *Melanorrhoea usitata*, is laid over a foundation either of wood or bamboo wicker-work. Flat trays, or *byats*, and betel boxes, cylindrical, with deep covers and ornamented with quaint patterns, are the two articles that the lacquerer produces in greatest numbers. The Burmese lacquer-work is durable, light, and economical, and is outwardly attractive to the eye. The gold lacquer industry has almost disappeared from the Province. It will be a matter for regret if this art is allowed to die out finally, for it is distinctive and picturesque. The lacquer industry was the means of support of 14,274 persons of both sexes in 1901. Of these 4,277 males and 2,702 females were actual workers, more than one-third of them in Myingyan District.

Indigenous sculpture may be said to be confined to the making of alabaster figures of Buddha. The design adopted is always conventional and uniform. It is ordinarily helped out with a little outline colouring, and is absolutely devoid of artistic beauty. Of the 349 persons returned as working sculptors in 1901, all are probably to be included in the category of sacred image modellers. Wood-carving is a source of income to a small but not unimportant section of the community. Carving has always been a feature of the finer timber monasteries of the Province, and the art has been steadily fostered, though it has far fewer exponents than has the silverwork industry. The majority of the wood-carvers are found in the main centres of trade, and their work, did they choose to produce systematically, would probably find a ready market among the European community. As a rule, however, they work to order and accumulate no stock of carved material. Burmese carving is free, and on the whole graceful, and is often executed in high relief. Floral and figure designs are frequently combined, and, considering the primitive nature of the tools employed, the result is, as a rule, singularly effective. It never fails from over-minuteness, for not only are the implements rough but the wood employed is ordinarily coarse-grained. The more delicate ivory-carving is also one of the arts of Burma, but its votaries are few in number and it is confined to a few special localities, such as Moulmein town.

Mat-weaving is a popular industry, supporting 53,585 persons in 1901. Mats are of various kinds. The commonest sort are of bamboo, the better kinds are woven of cane and reeds. Those used for sleeping on are of the latter class, and are known as *thinbyu*. A rough paper used for wrappers, umbrellas, and the like is made in Möngnai and elsewhere in the Shan States from the white inner bark of a species of mulberry-

tree known to the Shans as *maisaile*. Of the 749 persons actually engaged in the production of paper by hand in 1901, nearly half were enumerated in the Southern Shan States. The Burmese umbrella resembles the Chinese in outward appearance. It is light and graceful, but flimsy, and has unfortunately now had to yield largely to the black gingham of the European market. A total of 915 persons were engaged in 1901 in the production of the indigenous article. Cart- and boat-building are two of the important industries of the Province. Boats are of various kinds, ranging from the simple dug-out or *laung* to craft like the *laungzat* or *peingaw*, elaborately carved and of a capacity of up to 40 tons. Cart-builders in 1901 numbered 5,946 actual workers and dependents, and boat-builders and their families 5,840. The use of European boots and shoes is becoming common in towns, but the ordinary Burman does not usually look outside the Province for his foot-gear. His sandals (*panat*) are made of wood, leather, or felt, and are kept in position by two thongs which run from the two sides of the sole and unite in the front, passing between the great and second toes. The manufacture of Burmese sandals was the means of support of 12,864 persons in 1901.

The year 1892 was the first in which statistics of factory manufactures were published in Burma. In that year 106 factories were registered under the Factories Act in the Lower province. One of them was a cotton-press, 5 were iron-works, 2 printing presses, 52 rice-mills, 41 timber-mills, 3 ice-works, and 2 oil-works. The number of workmen employed in these factories was 21,136, of whom 20,335 were male and 588 female adults, while 213 were children. All these factories used steam-driven machinery, and each employed not less than twenty persons. In 1902 the number of factories under inspection in Burma had risen to 173, of which 96 were rice and 54 timber-mills. The great majority of the factories of the Province fall, and are likely for many years to fall, under one or the other of the two last-named classes. There were five iron foundries in Rangoon in 1902 and one in Moulmein; two oil refineries, both in Rangoon or in its neighbourhood; and a brewery in Mandalay. This last has not yet been brought under the provisions of the Factories Act. The total number of factory hands employed in 1902 was 28,517, of whom 27,890 were adult males, 527 adult females, and 100 children of both sexes. The figures for 1903 were: males, 31,327; females, 861; children, 157. The majority of the operatives come from India; and the growth of factory industries, though not affecting internal migration to any appreciable extent, has left its mark on immigration from outside the Province. Akyab draws its coolies mainly from Bengal; Rangoon and Bassein from the East Coast Districts of Madras. Wages in factories vary with the locality, as well as with the amount

of technical skill required of the operatives. Highly trained mechanics receive as much as Rs. 60 a month, and even unskilled labour is very well paid. Male coolies ordinarily receive from Rs. 10 to Rs. 15 a month, and female coolies, when employed, are frequently paid at the same rates as the men. The material condition of the operatives is indubitably good. The mill hand can live comfortably on half his monthly wage, and almost invariably returns to his own country with a considerable hoard of savings. So remunerative is factory labour that the supply of operatives is always on a level with the demand.

Commerce and trade.

For centuries the seaboard of Burma has been visited by ships from many countries. Bassein was a flourishing port in the twelfth century, and at a later period we find Arabs and other Asiatic races in constant communication with Arakan, Pegu, and Tenasserim. Towards the beginning of the second half of the fourteenth century, Muhammadan merchants carried on a brisk trade between Pegu and the countries east and west. The Arabs brought to Burma goods of European manufacture as well as the produce of their own country; and large sea-going boats from Arakan visited the ports of Bengal. The principal exports from Bassein and Pegu were gold, silver, rubies, sapphires, long-pepper, lead, tin, lac, and some sugar. The imports from Arabia and the Persian Gulf to Syriam, an ancient emporium of Burma, close to the mouth of the Pegu river, were woollen cloths, scarlet velvet, and opium; and from Madras and Bengal piece-goods of various kinds. The trade of Malacca and places to the eastward was with Mergui and Martaban, then flourishing ports of Tenasserim, the imports being porcelain from China, camphor from Borneo, and pepper from Achin. From Arakan, rice was the principal export, the imports being muslins, woollens, cutlery, piece-goods, and glass and crockery ware. Tenasserim exported tin largely. After the cession of Arakan to the British, Akyab rapidly rose in importance. The trade of Tenasserim, when the British came into possession, was at a very low ebb. The country, however, had large teak forests, which led to the foundation of the town of Moulmein, where ship-building could be extensively carried on. Later on, after the second Burmese War, Rangoon came into prominence and has now far out-distanced the older ports.

The chief items of the export trade of Burma are rice, timber, cutch, hides, petroleum, india-rubber, cotton, and precious stones. It is the rice produce and the rice exports that have made, and maintain, the prosperity of the Province. Paddy and rice now form more than three-quarters of the total exports. The only other item of export which can approach rice in importance is teak timber. The chief imports are piece-goods, silk, salted fish, wool, cotton twist, gunny-bags, betel-nuts, liquors, tobacco, iron, mill machinery, and sugar.

The chief centres of trade in the Province are the seaports of RANGOON, MOULMEIN, AKYAB, BASSEIN, TAVOY, MERGUI, KYAUKPYU, SANDOWAY, and Victoria Point; and, in the interior, MANDALAY, BHAMO, PAKOKKU, PROME, HENZADA, and MYINGYAN. The bulk of the trade at the ports is sea-borne. Mandalay and Bhamo are the two main emporia for the trade with South-Western China and the northern portion of the Shan States, which is wholly by land. The trade of Pakokku, Prome, Henzada, and Myingyan is partly river- and partly land-borne. Rangoon exports rice, timber, cutch, hides, india-rubber, tobacco, and cotton. Akyab and Bassein export little else than rice, but Moulmein sends timber, also rice and a little tobacco. The chief exports of Mergui are fish and shrimp paste (*ngapi*), dried prawns, salted fish, mother-of-pearl and its substitutes, and tin. The produce that leaves Tavoy by sea is miscellaneous in nature, but rice preponderates; and it may be laid down in general terms that the amount of merchandise other than rice and timber which passes out through the smaller ports of the Province is practically a negligible quantity. Rangoon's chief imports are hardware, piece-goods, kerosene, salted fish, liquors, and sugar; and the smaller ports follow suit on a less extended scale, the only noticeable feature being Moulmein's large importation of betel-nuts and sugar. Mandalay is the headquarters of the tea and jade trade of Upper Burma, and Myingyan is largely concerned with the cotton grown in the dry areas of the Upper Province. Rangoon possesses a Chamber of Commerce, formed in 1877 with a view to the furtherance of commercial interests in the Province, and a Trades Association. The port of Rangoon is administered by a Port Trust constituted under the Rangoon Port Act of 1905. There are thirteen commissioners, of whom four are elected by the Rangoon Chamber of Commerce and one by the Rangoon Trades Association, the others being appointed by the Local Government. The chief executive authority is vested in a full-time chairman, who is also the Chief Engineer of the port. The receipts of the Port Fund in 1881 amounted to nearly $5\frac{1}{2}$ lakhs, and its expenditure to over $6\frac{1}{2}$ lakhs. In 1902–3 the corresponding figures were $15\frac{1}{2}$ and $14\frac{1}{3}$ lakhs respectively, and in 1903–4 the income had risen to $17\frac{3}{4}$ lakhs.

The simplest method of classifying the trade of the Province is that which distinguishes between the internal and the external trade. External trade may be with countries beyond the limits of British India (trans-frontier) or with other Provinces of the Indian Empire. The trans-frontier sea-borne trade is registered by the Customs department, the trans-frontier land trade with China, Siam, and other Asiatic countries by a Trade Registration department under the Director of Land Records and Agriculture. External trade with the rest of British India may similarly be maritime or land trade. In the former case

it is generally known as coasting trade and is registered by the Customs department, in the latter it is not registered. Table V (p. 238) gives statistics of the sea trade of the Province with other Provinces and with foreign countries, and of its foreign land trade, for the years 1890–1, 1900–1, and 1903–4.

The internal trade of Burma is still mainly in the hands of the Burmans; but they hold their own with difficulty when pitted against the natives of India and of China, whose shrewdness and business capacity have enabled them to take a large proportion of the petty business away from the people of the country. The rail- and waterways are the main commercial highways of the country in Burma proper. Up to 1892 practically the only statistics of internal trade were those furnished by the Irrawaddy Flotilla Company and the railway administration. In 1892 steps were taken to register the trade carried on by the country boats plying on the rivers of Burma, but it was found that the value of the information furnished was not commensurate with the cost incurred in collecting the required data, and in 1897 the arrangements were discontinued. The boat trade is still largely carried on by the indigenous population, and the floating pedlars it supports are able to reach a portion of the community untouched by bazars and the ordinary traffic of the market-place. Though its precise extent has not been gauged of recent years, the internal trade of Burma is comprehensive and far-reaching. Here statistical details, which must of necessity be defective, are of no great value. Advantage may, however, be taken of what has been collected in the past to place on record that in 1896–7, the last year of registration, the value of the internal trade of Burma was given as about 937 lakhs. Between Burma proper and the Shan States, and within the limits of the latter, there is a fairly extensive caravan traffic; bullocks and mules are the main means of transport, but a considerable portion of the merchandise is conveyed in baskets slung on bamboos upon the shoulders of carriers. This section of inland trade has been in the past, and is still, registered by the Trade Registration department. The value of the inland trade between Burma and the Shan States amounted in 1903–4 to over 78 lakhs under exports and 104 lakhs under imports. In return for the cotton twist, cotton goods, salted fish, and betel-nuts, which form the bulk of what they take from Burma, the Shan States send into the Burmese markets tea (pickled and dry), timber, fruit, vegetables, and cattle. The Northern Shan States supply the greater part of the pickled tea (*letpet*) consumed in the Province. The value of this commodity imported from the Northern Shan States in 1903–4 was about 22 lakhs. Barter is occasionally resorted to by the inland traders, especially in the case of dealings with the hill tribes, but the practice is not widespread.

There is a little land trade between Burma and the rest of India. Goods pass between Akyab and Chittagong and Assam and the Upper Chindwin District; but the business done over these inland trade routes is insignificant, is not registered, and for general statistical purposes may be left out of consideration. Burma's commercial intercourse with the rest of the Indian Empire may be said to be almost wholly maritime. It is carried on to a small extent by native craft; but the great bulk of what is known as the coasting trade of the Province is in the hands of the British India Steam Navigation Company, which unites the Province with all the chief commercial ports of the seaboard of the Indian Empire, besides furnishing steamer services which ply the whole length of the coast from Akyab to Mergui. The Asiatic Steam Navigation Company is also concerned in the coasting trade of the Province. It connects Rangoon with the Andamans and several ports of India. Of the imports from other Provinces the most notable are coal, tobacco, gunny-bags, cotton yarn, vegetable oil, and betel-nuts, while rice, mineral oil, and teak timber form the bulk of the exports. The coasting trade of the Province passes through the larger ports, namely, Rangoon, Akyab, Moulmein, Tavoy, and Mergui, and to some extent through Kyaukpyu, Sandoway, and Victoria Point. In the smaller ports the imports by coasting trade ordinarily exceed the exports. In Rangoon the case is reversed, and, taking the Province as a whole, the export business exceeds the import. Bassein is not visited by any of the regular coasting lines of steamers, and thus, though its foreign trade is far from inconsiderable, it does very little coasting business.

Table V appended to this article (p. 238) shows that, excluding Government treasure, the total value of the maritime trade of Burma with other Provinces in the year 1903–4 was nearly 7 crores under imports and more than $4\frac{3}{4}$ crores under exports, the corresponding figures for 1900–1 being, in round figures, 6 and 10 crores. In the latter year the exports were raised by the abnormal demand for rice from the Provinces suffering from famine, especially from Bombay; and it may be said in general terms that the existence or non-existence of calls of this nature decides whether the coasting trade of the Province in any one year shall exceed or fall below its foreign trade. A noticeable feature of the coasting trade returns is the fact that famine in India, while affecting the destination of shipments from the rice-exporting ports of Rangoon and Akyab, has in the past failed to divert the rice supply of Bassein from its ordinary foreign channel.

The foreign sea-borne trade of Burma is carried by the boats of the Bibby, the Patrick Henderson, and other lines, and passes for the most part only through the larger ports of the Province: namely, Rangoon, Akyab, Moulmein, Bassein, Tavoy, and Mergui. Except at Rangoon,

there is no comparison between the imports and the exports under foreign trade, the proportion the latter bear to the former in the lesser ports being roughly 20 to 1. An instance of this disparity may be cited. At Bassein the value of foreign exports in the year 1900–1 was over 103 lakhs, that of foreign imports was Rs. 354. Rice and timber are the main articles of export, and the imports are generally those indicated on p. 178. Details will be found in Table VI on p. 239, which shows that in 1903–4 the total foreign import trade was valued at 8¼ crores, and the export trade at nearly 16 crores.

The increase in exports and imports under foreign trade during the past twenty years has on the whole been steady. The trade of the first half of the decade 1891–1900 was disastrously affected by a combination entered into by the rice-millers in 1893 to keep down the price of rice. Since then, however, there have been no very marked fluctuations, though the effect of the scarcity of 1896–7 in Upper Burma is visible in the yearly trade returns.

In the matter of foreign imports the United Kingdom heads the list of supplying countries. In 1900–1 it supplied 4 crores' worth of goods, or 58 per cent. of the total, and in 1903–4 4¾ crores, about the same proportion. The Straits Settlements, important as a distributing rather than as a producing centre, are the second largest supplier. Japan follows next in the list of importing countries, and the rapid growth of its business with Burma is not the least significant feature of the trade statistics of the past decade. The Straits Settlements were Burma's largest customer in 1903–4, the exports exceeding in value those to the United Kingdom (349 lakhs against 254 lakhs); but it should be mentioned that information as to the ultimate destination of a good deal of the produce exported from the country by sea is defective, in consequence of the practice of shipping in vessels whose ultimate destination is unknown. A considerable portion of the exports to the Straits is intended for Java, Sumatra, Borneo, and Eastern Asia generally.

The trans-frontier land trade of Burma is carried on with China, Siam, Karenni[1], and French Indo-China, and is registered at a number of frontier stations. The trade with Western China passes for the most part over a route terminating at Bhamo on the Irrawaddy, though there is some traffic through Myitkyinā District and the Northern Shan States. A small portion of the Western China trade also passes through the registration stations established south of Maymyo along the Shan States border. Karenni sends its merchandise for the most part down the Salween to Kawludo and Kyaukhnyat. Dagwin, Tadanku, and Kwanbi, stations along the eastern frontier of the Tenasserim

[1] Karenni, though controlled by the British Government, is not part of British India, and, for trade purposes, has been treated as a foreign country.

Division, secure the bulk of the trade between Burma and Chiengmai that does not pass through the Shan States, while commerce with the rest of Siam, besides traversing the Tadanku route, crosses the frontier hills near Kyeikdon in Amherst and Myitta in Tavoy District. The merchandise that enters and leaves the country by land is carried mostly by pack-bullocks and mules, though cooly-carriage is not uncommon. The traders seldom travel singly; and caravans mark, with jangling bells and clouds of dust, their progress up and down the main frontier highways during the whole of the dry season. The Burman himself takes very little active part in the trans-frontier land trade of his country. The carriers are Shans, Maingthas, Panthays, Chinese, and Siamese. The registration stations are placed on the roadside at suitable points where traffic converges, and the record of statistics may be said on the whole to be fairly accurate. In 1891 the total number of registration stations was 13, in 1904 it was 33.

The figures in the foreign land trade table appended to this article (p. 241) show that trade of this class increased very largely during the ten years ending 1901. In the case of imports the total for 1901 is almost exactly double what it was in 1891, and the exports have more than doubled; the figures for 1903–4 show a further increase. The present trans-frontier land trade is in value and extent still far below the trade that passed before 1885 between British and Independent Burma, but its development during the past few years augurs well for the future. The distribution of the total of 1903–4 between the different foreign countries concerned is as follows, the figures being given in thousands of rupees:—

	Imports from.	Exports to.
Western China . .	27,00	35,95
Siam	16,37	10,77
Chiengmai . . .	32,97	21,87
Karenni . . .	32,18	9,27
Total	1,08,52	77,86

Western China is mainly responsible for the growth in this class of trade. In 1891 its imports and exports were smaller than those of the other countries shown above, while it now heads the list. The main imports are teak timber, cattle, ponies, hides, tea, and silk. Cotton, cotton yarn, piece-goods, and dried fish make up the bulk of the exports.

Communications.

The backbone of the railway system of Burma is a line which, starting from Rangoon, runs northwards, some distance to the east of the Irrawaddy and more or less parallel with its course, as far as Mandalay, and thence proceeds through the country lying to the west of the river, bearing generally to the north,

and curving eventually eastwards until it reaches the river again at Myitkyinā, the head-quarters of the most northerly District of Upper Burma. This line, which is 724 miles in length, traverses the greater part of Burma from end to end. A steam-ferry service across the Irrawaddy connects the southern with the northern section at Sagaing, a few miles below Mandalay. The southern (Rangoon-Mandalay) section sends out two branch lines. The first, 71 miles in length, leaves the main line at Thazi, about 80 miles due south of Mandalay, and passes north-west, through Meiktila, to Myingyan on the Irrawaddy. The second starts from Myohaung, a junction just beyond the southern limits of Mandalay city, and runs north-east 180 miles into the Northern Shan States as far as Lashio. A noticeable feature of this line is the steel viaduct, 1,620 feet in length and at its highest point 325 feet above ground, which spans the Gokteik gorge. The northern section of the main line has also two branches: one runs westward from Sagaing till it taps the Chindwin at Monywa and Alon (73 miles); the other is a minor feeder to the east, 15 miles in length, which terminates at Kathā on the right bank of the Irrawaddy and serves to connect that station, as well as Bhamo, a little farther upstream, with the main system.

The southernmost portion of this main line, which extends 166 miles from Rangoon to Toungoo, a frontier station in the days preceding the annexation of Upper Burma, was commenced in 1881 and completed in 1885. The Toungoo-Mandalay section was taken in hand shortly after the annexation of the Upper province, and was completed in 1889. During the same year a start was made on the extension northwards (known first as the Mu Valley State Railway), and the final section, which brought Myitkyinā into direct railway communication with the south, was opened to traffic in 1899. The branch lines have been mostly completed since that year.

The oldest railway in the Province is, however, not a portion of the main line, but lies to the west of it, connecting Rangoon with Prome on the Irrawaddy. This railway, which was completed in 1877, is 161 miles in length. It runs in a north-westerly direction through the Pegu Division of Lower Burma. A branch line, completed in April, 1903, leaves it at Letpadan, about half-way between Rangoon and Prome, and runs to the left bank of the Irrawaddy opposite the town of Henzada. Here the river is crossed by a steam ferry, and the line proceeds on from Henzada in a south-westerly direction to Bassein (115 miles). From Henzada a line northwards to Kyangin (66 miles) is under construction. Moulmein will shortly be connected with Rangoon by a line which will take off from the Rangoon-Toungoo section at Pegu, and, crossing the Sittang, will pass down the eastern coast of the Gulf of Martaban to the nearest suitable point of the Salween opposite

Moulmein. It will be about 120 miles in length, and its construction has been taken in hand. The construction of a railway from the Toungoo-Mandalay section of the main line eastwards into the Southern Shan States is in contemplation. The extension of the Northern Shan States Railway from Lashio across the Salween to the China border has for the present been abandoned. Sanction has, however, been given for the survey of a line from Bhamo towards Tengyüeh in the Yünnan Province of China, and arrangements have been made to obtain the consent of the Chinese Government to the survey being carried beyond the frontier between the two countries.

Till 1896 the railways of Burma were state lines. They were then taken over by the Burma Railways Company; and in 1897 a contract was entered into between the Secretary of State and the company which guaranteed interest at the rate of $2\frac{1}{2}$ per cent. on the company's share capital of £2,000,000, and provided for the division between Government and the company of the annual surplus in the proportion of four-fifths to the former and one-fifth to the latter.

The total length of line open in 1891 was 609 miles; in 1901 it was 1,178 miles, and by 1905 it had risen to 1,340 miles. There was then one mile of railway to every 176 square miles of country, and the average cost of construction per mile had been Rs. 94,392. The gauge is metre.

Railway communication has done much towards reducing the prices of imported articles in the remoter portions of the country. Scarcity is as a rule so partial in Burma that it is doubtful whether the railway will ever be called upon to play as important a part in combating famine as in less-favoured Provinces. There can be no doubt, however, that it will prove very useful whenever there is a failure of crops on a large scale in the Districts liable to scarcity, which are, as regards rail communications, exceptionally well served. The railway is proving a formidable competitor of the Irrawaddy Flotilla Company, which has practically a monopoly of the private carrying business on the inland waters of Burma; but river carriage is, for various reasons, still preferred to rail by a large section of the trading community.

There are two steam tramways in the province. The first is 8 miles in length and runs from Duyinzeik, on the Donthami river in Thaton District, to Thaton, the District head-quarters. The capital cost of construction up to the end of 1895, the last year for which capital and revenue accounts were submitted, was nearly $4\frac{1}{2}$ lakhs. By an agreement entered into between Government and the original owner in January, 1884, a subsidy of Rs. 1,000 per mile was paid for three years after the date of opening on condition that a proper service should be maintained, and for ten years Government kept up all the bridges on the line. From December 1, 1900, the tramway passed into the hands of

the Irrawaddy Flotilla Company. The receipts amounted in 1903 to Rs. 32,000. In all 34,362 persons travelled by the tramway during that year.

The other tramway is in Rangoon, and its construction and maintenance are regulated by the Rangoon Tramways Act (XXII of 1883). The cost of construction has exceeded 10 lakhs. Its working expenses and net earnings in 1903 were about $1\frac{3}{4}$ lakhs and three-fourths of a lakh respectively, and the return on capital is about 8 per cent. The number of passengers carried daily during 1903 was about 9,000. The line will shortly be electrified. An electric tramway on the overhead trolley system was opened in July, 1904, in Mandalay city. It is worked by the Burma Electric Tramways and Lighting Company, with a capital of £200,000; and its present length is 6 miles of double track. An application for permission to construct a light tramway from Mandalay to Madaya is under consideration.

Nothing is more illustrative of the march of events during the past fifty years than the difference in the principles on which the road systems of the two portions of Burma have been designed. In Lower Burma the two principal roads, from Rangoon to Prome and from Rangoon to Toungoo, cover practically the same ground as two main stretches of railway line which later conditions showed to be necessary on strategical as well as commercial grounds. Upper Burma, on the other hand, came into the occupation of the British at a time when railway- and road-building went naturally hand in hand. The railway there took the place of the trunk roads constructed in the early days of British authority in the Lower province, and the guiding policy of road-construction was to provide feeders for the railway and the rivers. Railway expansion has enabled branch lines to be subsequently carried over ground covered by several of these feeders; but from the southern limit of Yamethin District to Myitkyinā in the north no considerable outlay has been incurred in the construction of communications that run in any way parallel with the main line of railway, and this policy has saved unnecessary expenditure which the conditions obtaining up to the last quarter of the nineteenth century rendered unavoidable in the Lower province. In Lower Burma, especially the deltaic portion, natural waterways have been largely used for communications; but, with the extension of the railway system, feeder-roads are being provided to give access to new railway stations. In pursuance of this policy of affording approach to the main lines of river and railway communication, the Chin Hills have been connected with the Chindwin and the Irrawaddy by a system of cart-roads and bridle-paths from Kalewa and Pakokku as far as the Lushai Hills frontier, and similar action has been taken in the direction of the frontiers from Bhamo and Myitkyinā. The Irrawaddy and the railway are now in touch with all important towns and

trade centres, while on the navigable portion of the Salween and its branches several useful feeders have been completed in recent years.

In 1891 the main road lines of the Province were the road running from Rangoon to Prome; the road from Rangoon to Pegu, and thence in sections to Toungoo; the road from Myingyan to Fort Stedman, passing through Meiktila and connecting the Irrawaddy with the headquarters of the Southern Shan States; and the road from Thabeikkyin to Mogok in the Ruby Mines District. A considerable portion of an important road from Mandalay through Maymyo to Lashio in the Northern Shan States, the precursor of the railway in the same direction, had been completed by the same year, when there were approximately 4,674 miles of road outside municipal limits in both portions of the Province, 1,110 of which were metalled. By 1901 the total length of communications other than municipal roads had risen to 8,999 miles, of which 1,588 miles were metalled, but no important modification had been introduced into the road system of the Province. After the Mandalay-Lashio road referred to above, one of the largest undertakings completed in this decade was a mule track from Fort Stedman to Kengtung, then the remotest military station in the Province, which will shortly be superseded by a cart-road as far as the Salween, 228 miles from the railway. Another useful frontier track is that leading from Bhamo south-eastwards to Namkhan on the Chinese border, and an important work has recently been commenced in the shape of a road which crosses the frontier in Bhamo District and leads to Tengyüeh in Yünnan. A road is under construction to connect the navigable waterways near Moulmein with the Siam frontier, which is also reached by a road from Tavoy. In 1904 the total length of Provincial roads amounted to 9,369 miles.

The expenditure on land communications other than municipal in 1890–1, 1900–1, 1902–3, and 1903–4 was as follows:—

Year.	Original works.		Repairs.	
	From Imperial and Provincial funds.	From Local funds.	From Imperial and Provincial funds.	From Local funds.
	Rs.	Rs.	Rs.	Rs.
1890–1	11,00,000	1,43,000	7,05,000	53,000
1900–1	12,62,000	2,53,000	17,51,000	1,71,000
1902–3	19,82,000	1,03,000	18,41,000	2,26,000
1903–4	23,63,000	1,34,000	18,40,000	2,22,000

Though much has been done in the way of road-making and maintenance, land communications in the interior are still defective. Many of the roads are mere mule-tracks, and a large proportion are practically impassable during the height of the rainy season. In the wet

Districts cart-roads are few and far between, but in the dry areas of Upper Burma country carts are able to move about freely at all seasons of the year. The Burmese cart is light but durable. Till recently the prevailing type of wheel in the rural area was of the solid kind, rough, often very far from circular, and highly destructive to the roads. This form of wheel has, however, of recent years been largely superseded by the spoked variety. On these wheels considerable labour and occasionally some little artistic skill are expended, in marked contrast to the body and shafts, which are almost invariably of the roughest description. Tilts or covers of matting or thatch are common.

Burma abounds in rivers, streams, and tidal creeks, and the southern portion of the Lower province is a veritable network of natural waterways. Thus in Lower Burma there has never been any pressing need for canals, and such artificial additions as have been made to the existing water system consist generally of transverse (east and west) connexions of the streams that run southwards into the sea. The principal navigable canals are the PEGU-SITTANG CANAL, uniting the Pegu river and the Sittang; the TWANTE CANAL, forming a junction between the Irrawaddy and the Rangoon river; the SITTANG-KYAIKTO CANAL, a waterway running south-east from the Sittang into the western portion of Thaton District; and the Shwetachaung Canal in Mandalay District. Work on the Pegu-Sittang Canal commenced in 1873–4, and the channel was opened in the beginning of 1878. The Twante Canal was begun in 1881–2 and opened in May, 1883. The year 1882–3 saw the commencement of the work on the Sittang-Kyaikto Canal. This last was intended to form a portion of a larger undertaking, the union of the Sittang and Salween rivers; but the second section of this project, that between Kyaikto and Bilin, has been abandoned. The Shwetachaung Canal is an old Burmese irrigation work near Mandalay remodelled and used for navigation purposes. Tolls are levied on it and on the Pegu-Sittang Canal, but on no other of the navigation channels in Burma. The capital expenditure on the Pegu-Sittang Canal up to the end of 1903–4 was 44 lakhs, that on the Twante Canal 3 lakhs, and that on the Sittang-Kyaikto Canal 10 lakhs. No capital accounts are, however, kept for any of the navigation channels above referred to. Up to the end of 1903–4 the receipts from tolls on the Pegu-Sittang Canal aggregated 19·3 lakhs, against a total outlay of 58·6 lakhs. So far the realizations from tolls on the Shwetachaung Canal have been insignificant and form a small portion only of the revenue from the work.

The British India and the Asiatic Steam Navigation Companies are the two regular lines which carry passengers coastwise within the limits of the Province. The British India steamers ply the whole length of the coast from Akyab to Mergui. The Asiatic Steam Navigation Company's principal passenger work lies between Rangoon and Port Blair,

but their boats visit other coast ports. Both these lines also connect Burma with Indian ports, and the British India boats run from Rangoon to Penang and Singapore. Direct communication between Burma and Europe is kept up by the steamers of the Bibby line and the British and Burmese Steam Navigation Company (Patrick Henderson). The great bulk of the river steamer traffic is in the hands of the Irrawaddy Flotilla Company, whose boats and flats are familiar objects on nearly all the inland waters of Burma. This company owned (at the end of 1903) 45 river steamers and 75 other steamers of various descriptions, working over a length of more than 5,000 miles, and carrying nearly 2¼ millions of passengers. The company employs over 7,000 persons, and its receipts in 1903 exceeded 81 lakhs. There are a few small private lines, but the Government, with its fleet of Indian Marine and local river-boats, is the only other river carrier of importance. Native craft of all kinds ply on all the larger rivers. Ferries abound in all the river Districts. They are managed by Government lessees, who are required under the terms of their leases to conform to Government rules prescribing rates of tolls and other matters connected with the working of the ferries.

In the early days of British dominion in the Province postal arrangements were on a small scale. Government steamers and country boats were used largely for the carriage of mails in the interior. Postal communication between Rangoon and Calcutta, and Rangoon and Moulmein, was fortnightly, and there was a mail once a month to Tavoy and Mergui. There are now three direct mail steamers weekly between Rangoon and Calcutta, and one between Rangoon and Madras. Steamers ply between Rangoon and Moulmein every other week-day, while all the other principal stations on the sea-coast are served once in seven days. The steamers of the Irrawaddy Flotilla Company carry letters at least weekly to the few river stations where the railway has not secured a daily service. From all the main centres District post lines radiate out into the rural areas, and there is no place of any commercial or administrative importance in Burma proper that the post has not placed in ready touch with the outside world. The first year for which postal statistics are available is 1862–3, when the total number of letters received and dispatched was 673,939, and of other articles, such as parcels, books, and newspapers, 177,287. These totals had risen by 1878–9 to 1,286,990 and 393,835 respectively. In 1881–2 there were 55 post offices open in Burma. In 1891–2 there were exactly 200 more; in 1900–1 the total was 299, and in 1903–4 it was 399. The table on the next page gives the main postal statistics for the years 1880–1, 1890–1, 1900–1, and 1903–4.

In 1881–2 the total of postal employés of all classes was 171. By 1903 the aggregate of the postal establishment had risen to 1,592,

a figure which includes Imperial establishments only and does not comprise a host of rural postmen and peons employed on the District post system whose services are paid for out of local revenues.

	1880-1.	1890-1.	1900-1.	1903-4.
Number of post offices	30	247	298	339
Number of letter-boxes	101	445	1,228	1,404
Number of miles of postal communication	6,557	8,943	10,882	11,381
Total number of postal articles delivered*:—				
Letters . . .	1,778,411	8,726,523	12,875,495	15,629,509
Postcards . .	43,383	557,837	1,303,356	1,783,077
Packets . . .	42,444	483,220	2,260,297	2,379,253
Newspapers . .	434,063	1,694,618	1,456,471	1,786,023
Parcels . . .	28,496	144,984	220,525	188,726
Value of stamps sold to the public . .	Rs. 1,29,843	Rs. 4,25,470	Rs. 5,32,132	Rs. 6,65,163
Value of money orders issued . . .	20,45,210	1,44,54,250	2,79,21,972	3,43,99,037
Total amount of savings bank deposits .	...	19,67,378	33,79,913	29,32,304

* The figures for 1880-1 include the Andaman Islands.

Famine.

Its abundant rainfall has placed Lower Burma, humanly speaking, wholly out of reach not only of real famine but even of such distress as would follow on a partial failure of crops. In the southern half of Upper Burma the monsoon is often fickle and untrustworthy, but even here famine in the Indian acceptation of the term is practically unknown. Floods and insect pests work no widespread havoc among the crops. Drought has in the past temporarily disorganized the Districts of Meiktila, Yamethin, Minbu, Magwe, Shwebo, Sagaing, Myingyan, and Mandalay, and has rendered the opening of relief works necessary; but every year the improvement of communications and the construction of irrigation works thrust famine proper farther and farther out of the category of probable natural scourges. The recently opened canal has rendered parts of Mandalay District immune; and the next few years should see the same result achieved in parts of Minbu and Shwebo. Meiktila, Yamethin, and Sagaing are traversed from end to end by one, if not two, lines of railway; and Magwe lies between the railway line and the river Irrawaddy, and is, after Yamethin, the closest of the dry Districts to the well-watered areas of Lower Burma. That scarcity has left its mark upon Upper Burma is, however, indubitable; for, though mortality from famine (direct or indirect) is infinitesimal, failure of crops is largely responsible for the relatively small rate of increase that has taken place during the past ten years in the population of the dry zone (12 per cent. as against 27 per cent. in the moist Districts of Lower Burma), and no amount of irrigation works and railway lines will be

able to place some of the arid areas in a position to compete with the wetter portions of Burma or to free them from periods of anxiety. Before annexation, famines in Upper Burma were of not infrequent occurrence. No reliable details regarding their area and intensity are forthcoming, but there can be no question that they were at times very severe. Between the annexation and 1891 there was no extensive scarcity. In 1887 there was a partial failure of crops in a portion of what is now Shwebo District, but relief works were not considered necessary. In 1891 deficient rain caused a shortage of crops in the greater part of the dry zone. From December, 1891, to March, 1892, distress was acute over an area of more than 80,000 square miles, emigration on a large scale to Lower Burma commenced, and it was necessary to open relief works and grant gratuitous relief, though recourse to the latter step was not frequent. The number of persons on relief works during the period of greatest depression was over 20,000, and the cost of the measures taken to combat the scarcity amounted to more than 15 lakhs. The period between 1891–2 and 1896–7 was one of indifferent harvests in Upper Burma. In 1895–6 there was a partial failure of crops, and in 1896–7 the early rains failed in the Districts of Meiktila, Myingyan, and Yamethin. The area affected by the drought covered 5,300 square miles, with a population of 528,000 persons. The first relief works opened were unimportant; but later it was found that more extensive operations would be needed, and work was started, first on the earthwork of the Meiktila-Myingyan Railway, and then on a large tank in Myingyan District. From December, 1896, to February, 1897, the average of persons in receipt of relief was 28,000. There was a diminution during the next few months, but by August the aggregate had risen to 30,000. The grant of gratuitous relief was found necessary, and the expenditure on aid of all kinds to the sufferers was a little over $5\frac{1}{2}$ lakhs. Since then there have been threatenings of scarcity, but no real distress, in Upper Burma. Even the most serious scarcity experienced so far in the Province must, when judged by Indian standards, be looked upon as slight. None of the droughts has added appreciably to the death-rate of the Province, no deaths from privation have been recorded as a result of their occurrence, and no visible reduction of the birth-rate has followed in their wake.

The construction of irrigation works is the principal measure adopted to minimize the results of deficient rainfall in the famine-affected areas. These works are on a large scale, for experience has shown that tanks and the like with an insignificant catchment area cannot be relied upon in the lean years. The necessity for adequate professional knowledge in the matter was one of the causes which led to the establishment in 1892 of a separate Public Works Irrigation Circle, on the officers of

which devolves the duty of designing and carrying into execution schemes for supplementing the existing water-supply of the more arid tracts. The weekly crop reports compiled by Deputy-Commissioners from data furnished by township officers regarding the price of grain, the nature of the weather, the existence of conditions likely to affect the harvest, and cognate matters, enable a constant watch to be kept on the economic condition of the agricultural community and give the earliest intimation of any possible scarcity of crops.

Administration.

The provinces of Arakan and Tenasserim were acquired in 1826, after the first Burmese War. The former became a portion of Bengal, the latter was administered by the Governor-General through a Commissioner. When Pegu was annexed in 1852, Martaban was placed under the Commissioner of Tenasserim, and the rest of the Province under a second Commissioner, also directly subordinate to the Governor-General, with his head-quarters in Rangoon. The whole of British Burma was constituted a Chief Commissionership in 1862, and Sir Arthur Phayre was appointed Chief Commissioner. His successors were General A. Fytche (appointed 1867), Sir Ashley Eden (1871), Sir Rivers Thompson (1875), Sir Charles Aitchison (1878), Sir Charles Bernard (1880), Sir Charles Crosthwaite (1887), Sir Alexander Mackenzie (1890), and Sir Frederic Fryer (1895). In 1897 the Province was constituted a Lieutenant-Governorship, and Sir Frederic Fryer became the first Lieutenant-Governor. He was succeeded by Sir Hugh Barnes in 1903, who was followed by Sir Herbert White in 1905.

The direct administrative functions of Government are performed by the Lieutenant-Governor through the medium of the Secretariat, which consists of five secretaries, four under secretaries, and two assistant secretaries. One of the secretaries deals with railway and another with ordinary Public Works business. The following are the principal heads of departments: the Financial Commissioner, who has a secretary and an assistant secretary; the Settlement Commissioner and Director of Land Records and Agriculture (with deputy and assistant directors); the Inspector-General of Police; the Director of Public Instruction; the Inspector-General of Prisons; the Inspector-General of Civil Hospitals; the Accountant-General; and the Postmaster-General. The last two represent Imperial departments under the Government of India. A Chief Conservator of Forests has recently been appointed. The Financial Commissioner, besides dealing with Land Revenue, Stamps, Income Tax, and Excise, is also chief Customs authority, Inspector-General of Registration, and Registrar-General of Births, Deaths, and Marriages.

The territories under the control of the Lieutenant-Governor consist of (*a*) Burma proper, (*b*) the Shan States, and (*c*) the Chin Hills.

The Division, in charge of a Commissioner, is the largest administrative area within Burma proper. Each Division is made up of a number of Districts, under Deputy-Commissioners; Districts are divided into subdivisions under subdivisional officers; and one, two, or more townships, under a township officer, go to each subdivision. Commissioners are always, and Deputy-Commissioners are ordinarily, officers of the Burma Commission. In the Northern Arakan and Salween Districts the Deputy-Commissioner is a Police officer. Subdivisional officers are members either of the Commission or of the Provincial or Subordinate civil services (Extra-Assistant Commissioners or *myo-oks*). Township officers (*myo-oks*) are practically always members of the Subordinate civil service. There are 8 Commissioners' Divisions (4 in Upper and 4 in Lower Burma), with an average population of 1,157,000 and an average area of 21,000 square miles; 37 Districts, with an average population of 250,000 and an average area of 4,556 square miles; 82 subdivisions, with an average population of 112,840 and an average area of 2,056 square miles; and 194 townships, with an average population of 47,695 and an average area of 869 square miles. Particulars regarding each District and Division as constituted in 1901 will be found in Table IV on pp. 236 and 237. The village system is in operation in both portions of the Province. In Lower Burma the *ywathugyi* or village headman, in charge of a single village or of a group of villages small enough to be efficiently administered by one village official, has, so far as the collection of revenue is concerned, taken the place of the *taikthugyi*, or circle headman, whose jurisdiction embraced a much larger area. In Upper Burma he is absorbing the *myothugyi* of pre-annexation days, an official whose jurisdiction corresponded in a measure with that of the *taikthugyi* of Lower Burma. The *ywathugyi* is in the first place responsible for the maintenance of order in his charge. He is also the rural revenue collector, and receives a commission on his collections; he exercises petty criminal and, in certain cases, petty civil judicial powers, and is the indispensable intermediary between the people and their rulers. The office has been made as far as possible hereditary, and often attracts a really good class of man. There were about 18,500 village headmen in the Province in 1903.

For the purposes of police and medical administration the divisions of the Province are to all intents and purposes the same as for general civil administration. Each District has a Superintendent of police and a Civil Surgeon, whose jurisdictions coincide with that of the Deputy-Commissioner. The Public Works and Forest administrative areas, on the other hand, differ to some extent from the civil. In their case the unit is the division in charge of an Executive Engineer or a Deputy-Conservator of Forests, as the case may be, and the division often

comprises portions of different civil Districts. Divisions are grouped into circles, which are, in the case of the Public Works department, in charge of Superintending Engineers and, as regards Forests, of Conservators. There are six Public Works and four Forest circles in Burma. Public Works divisions are divided into subdivisions, and Forest divisions into subdivisions and ranges. For educational purposes Burma is divided into circles under Inspectors of Schools and sub-circles under Deputy-Inspectors. There are four education circles, each of which comprises several civil Districts. The head-quarters of three of them are at Rangoon, those of the fourth at Mandalay. The education sub-circle ordinarily corresponds to a civil District. There are nine postal divisions, each under an Inspector of post offices, and three Telegraph divisions with twelve subdivisions [1]. The medical officer in charge of a station in which a jail is situated is *ex-officio* Superintendent of the jail.

The Shan States, though a portion of British India, do not form part of Burma proper and are not comprised in the regularly administered area of the Province. They lie for the most part to the east of Upper Burma. They owed allegiance to the Burmese government but were administered by their own rulers (Sawbwas), and the British Government has continued to a certain extent the semi-independence which it found existing in 1885. As at present defined, the Shan States are divided into—

(1) States under the supervision of the Superintendent, Northern Shan States, whose head-quarters are at Lashio;
(2) States under the supervision of the Superintendent and Political officer, Southern Shan States, whose head-quarters are at Taunggyi;
(3) The Myelat States, under the supervision of the same officer; The Superintendents of the Northern and Southern Shan States have Assistant Superintendents under them.
(4) A State under the supervision of the Commissioner, Mandalay Division.
(5) States under the supervision of the Commissioner, Sagaing Division.

The civil, criminal, and revenue administration of every State in the Northern and Southern Shan States is vested in the chief of the State, subject to the restrictions specified in the *sanad* or deed of appointment granted to him. The law administered is the customary law of the State, so far as it fulfils the general conceptions of justice and does not run counter to the spirit of the law of India. Chiefs can inflict the punishment of death on their own subjects for certain heinous offences,

[1] The Arakan Telegraph division includes the Chittagong Division of Bengal, a portion of which is comprised in the Akyab Telegraph subdivision.

but the Superintendents have a general control over the administration of criminal justice and exercise broad revisionary powers. In criminal cases in which persons other than natives of the Shan States are concerned, the jurisdiction is vested in the Superintendents and their Assistants. A simple procedure has been prescribed for the local criminal and civil courts. In revenue matters the chiefs administer their charges according to local rules and customs, which have been but slightly modified by the British Government.

The Myelat consists of a number of small Shan States which form a strip of territory running, north and south, to the west of the Southern Shan States, and lying between them and the Districts of Kyaukse, Meiktila, and Yamethin in Upper Burma. So far as civil law and revenue matters are concerned, the administration is the same in the Myelat as in the Southern Shan States. The criminal law, however, is practically that of Upper Burma. The total area supervised by the Superintendents of the Northern and Southern Shan States is 57,915 square miles, with a population of 1,137,444 persons in 1901.

The one State under the supervision of the Commissioner, Mandalay Division, is Möngmit, to the east of the Ruby Mines District, which, with its dependency Mönglang, is administered by the Deputy-Commissioner as if it were a subdivision of that District. Its administration is about to be handed over to the Sawbwa, who has attained his majority.

The States under the supervision of the Commissioner, Sagaing Division, are two in number: Hsawnghsup (called by the Burmans Thaungdut) and Zingkaling Hkamti. Both are on the banks of the Chindwin river. These are the last survivals of the collection of Shan States to the west of the Irrawaddy, many of which in ancient days acknowledged the suzerainty of the Sawbwa of Mogaung. To this category belonged also the State of Wuntho, in which a rebellion broke out in 1891, and which was in consequence absorbed into Upper Burma; and the State of Kale, which was abolished in the same year. The law administered in Hsawnghsup and Zingkaling Hkamti is practically the same as in the Northern and Southern Shan States.

The Chin Hills lie to the west of the river Chindwin and form a block of territory about 8,000 square miles in extent, which in 1901 contained a total population of 87,189. They are supervised by a Superintendent, with head-quarters at Falam, and four Assistant Superintendents. The law in force is regulated by the Chin Hills Regulation (V of 1896). So far as the indigenous races are concerned, the criminal law is, with a few modifications, the same as the law of Upper Burma, and the petty Chin Hills chiefs have not the same administrative powers as the Shan Sawbwas. A small portion of the Chin Hills, known as the Pakokku Chin Hills, is outside the jurisdiction

of the Superintendent, and is controlled by the Commissioner of the Minbu Division. A portion of the Chin area lying between the Chin Hills proper and the Northern Arakan District is not administered.

The Kachin tracts in the north, within the limits of the Province, are administered under the Kachin Hill Tribes Regulation (I of 1895). Beyond those limits the hill tribes are not directly controlled; and similarly no attempt has yet been made to administer Hkamti Long, a collection of petty Shan States in the extreme north of the Province, beyond the administrative border of Upper Burma—a geographical line, drawn at about the 26th parallel of latitude, along the northern border of Myitkyinā District. In the case of Karenni, on the other hand, a certain measure of control is exercised. The Karenni States lie on both sides of the Salween river, to the east of Toungoo District, and are bounded on the north by the south-western corner of the Southern Shan States. They are not part of British India and are not subject to any of the laws in force in the Shan States or Burma; but the Superintendent, Southern Shan States, and an Assistant Superintendent stationed at Loikaw exercise certain judicial powers in the States.

Legislation and justice.

A Legislative Council was created for Burma in 1897, which consists of the Lieutenant-Governor and nine members, five of whom are official and four non-official. The members do not as yet possess the rights of interpellation and of discussing the Provincial budget, which have been granted to the Councils of the older Provinces.

The following are the chief legislative measures specially affecting Burma which have been passed since 1880 and are still in force:—

Acts of the Governor-General in (Legislative) Council

Burma Steam Boilers and Prime Movers Act, XVIII of 1882.
Lower Burma Pilots Act, XII of 1883.
Burma Steam Boilers and Prime Movers Act, I of 1885.
Burma Military Police Act, XV of 1887.
Financial Commissioner, Burma Act, XVIII of 1888.
Lower Burma Village Act, III of 1889.
Lower Burma Towns Act, IX of 1892.
Northern India Excise Act, XII of 1896.
Burma Laws Act, XIII of 1898.
Lower Burma Courts Act, VI of 1900.

Regulations of the Governor-General in (Executive) Council

Upper Burma Municipal Regulation, V of 1887.
Upper Burma Village Regulation, XIV of 1887.
Upper Burma Land and Revenue Regulation, III of 1889.
Upper Burma Towns Regulation, VI of 1891.
Upper Burma Criminal Justice Regulation, V of 1892.
Kachin Hill Tribes Regulation, I of 1895.

Upper Burma Civil Courts Regulation, I of 1896.
Chin Hills Regulation, V of 1896.
Upper Burma Registration Regulation, II of 1897.

Acts of the Burma Legislative Council

Burma General Clauses Act, I of 1898.
Burma Ferries Act, II of 1898.
Burma Municipal Act, III of 1898.
Lower Burma Town and Village Lands Act, IV of 1898.
Burma Gambling Act, I of 1899.
Rangoon Police Act, IV of 1899.
Burma Forest Act, IV of 1902.
Burma Canal Act, II of 1905.
Burma Fisheries Act, III of 1905.
Rangoon Port Act, IV of 1905.

Till recently there was in Burma no such regular separation of judicial and executive functions as has been developed in the older Provinces of India. A scheme for the more satisfactory disposal of civil appeals and criminal trials and appeals by whole-time District and Divisional Judges in Lower Burma has, however, now been introduced. It involves the appointment of five Divisional Judges and seven District Judges (with jurisdiction extending over the areas shown in the tables below), and has been adopted to relieve the pressure caused by the growth of judicial work in the Irrawaddy Division and in the Lower province generally.

DIVISIONAL JUDGES

Number of Divisional Judges.	Area of jurisdiction.	
	Division.	Districts.
1	Hanthawaddy	Hanthawaddy and Pegu.
1	Prome . .	Tharrawaddy and Prome.
1	Bassein . .	Bassein, Henzada, and Thayetmyo.
1	Delta . .	Ma-ubin, Myaungmya, and Pyapon.
1	Tenasserim .	Toungoo, Thaton, Amherst, Salween, Tavoy, and Mergui.

DISTRICT JUDGES

Number of District Judges.	Area of jurisdiction.
1	Hanthawaddy District.
1	Pegu and Toungoo Districts.
1	Tharrawaddy and Prome Districts.
1	Bassein and Henzada Districts.
1	Myaungmya, Ma-ubin, and Pyapon Districts.
1	Akyab District.
1	Amherst and Thaton Districts.

A regular township judicial service has recently been created for Lower Burma. It consists of thirty-six judges.

The criminal procedure followed in Upper Burma differs in some particulars from that in the Lower province. For Upper Burma certain modifications in regard to powers of magistrates, appeals, and the like have been introduced into the Indian Criminal Procedure Code (which regulates the practice of the Courts in Lower Burma) by the Upper Burma Criminal Justice Regulation (V of 1892). The Code of Civil Procedure has been adapted to the special conditions of Upper Burma by the Upper Burma Civil Courts Regulation (I of 1896). The Chief Court for Upper Burma in both criminal and civil matters is that of the Judicial Commissioner at Mandalay. Commissioners of Divisions are Sessions Judges, and try cases without the aid either of jurors or assessors. The Mandalay Division has an Additional Sessions Judge. Deputy-Commissioners are District Magistrates, and exercise the special powers conferred by section 30 of the Criminal Procedure Code. Subdivisional officers are usually first-class, and township officers second- or third-class magistrates. The Civil Courts Regulation created the following grades of civil courts in Upper Burma: the township court, presided over by the township officer, with jurisdiction up to Rs. 500; the subdivisional court, presided over by the subdivisional officer, with jurisdiction up to Rs. 3,000; the District court, presided over by the District Judge (Deputy-Commissioner), without limit of pecuniary jurisdiction; the Divisional court, presided over by the Commissioner of the Division; and the Judicial Commissioner's court. The last two courts are purely appellate. The District court hears appeals from courts subordinate to it, appeals from the District court being heard by the Divisional court or by the Judicial Commissioner, according to the value of the suit or the nature of the decree.

In Lower Burma the Chief Court occupies the position of a High Court for the purposes of both civil and criminal justice. It was constituted in 1900 and is presided over by four judges, two of whom are members of the Indian Civil Service and two barristers. The Chief Judge is at present a barrister. The Chief Court discharges the functions previously performed by the Recorder of Rangoon, the Judicial Commissioner of Lower Burma, and a Special Court in which both these officers sat together, sometimes along with a third judge. In Arakan the Commissioner is Divisional and Sessions Judge. Elsewhere there are the special whole-time judicial officers referred to above. Sessions cases are tried with the aid of assessors, except in the Rangoon town sessions (where a judge of the Chief Court sits as Sessions Judge and cases are tried by a jury) and in Moulmein town. The Deputy-Commissioner is District Magistrate. In Lower Burma the Criminal Procedure Code is in force unmodified. For the purposes of civil

procedure the Code of Civil Procedure and the Lower Burma Courts Act (VI of 1900) are followed. The courts created by the latter enactment are, besides the Chief Court, those of the township, the subdivision, the District, and the Division. In both Lower and Upper Burma the Government appoints judges, and, while appointing *ex-officio* judges to some courts, appoints persons by name to others. In Upper Burma the executive officers are *ex-officio* civil judges except in a few townships. In Lower Burma there are special civil judges in about half the courts. There are twenty-four benches of honorary magistrates in the Province, and at the end of 1904-5 the number of these magistrates was 174. They generally sit in municipal towns for the disposal of petty cases.

There has been a steady growth in the amount of criminal judicial work in the Province during the last two decades. In 1881 the total of cases brought to trial in Lower Burma was 23,181. In 1891 the Lower Burma cases reached an aggregate of 38,755, while those of Upper Burma numbered 13,433, making a total of 52,188 for both portions of the Province. In 1901 the corresponding total was 70,161, and in 1903, 76,750[1].

In a community increasing as rapidly as that of Burma a steady rise in the figures of crime is to be looked for. It may be safely said, however, that improved detection has had as much to do with raising the figures as has increase of population. It is probable that in a few urban areas crime is actually and proportionately more rife at present than it was in 1881; but, looking at the Province as a whole, there can be no doubt that the gravity of the crime committed is far less now than ten or fifteen years ago. The annexation of Upper Burma and the disturbances that succeeded it transformed the whole nature of the crime of Burma. Sentences of transportation rose from 153 in 1885 to 1,504 in 1886; sentences of imprisonment for more than seven years from 32 to 78. The total of robberies and dacoities brought to trial in Lower Burma in 1881 was 101. In 1886 it was 1,180, and in 1888 no less than 1,419; and it was not till well into the second decade under review that real headway was made against offences of this violent nature, which, curiously enough, have been far more prevalent of late in Lower than in Upper Burma. The number of dacoities and robberies brought to trial in both portions of the Province in 1890 was 1,039; in 1891 it was 734; by 1896 it had fallen to 527, and by 1900 to 208. While crimes of violence have been diminishing, offences of a petty nature, especially against special and local laws, have been on the increase. It is the rise in these minor forms of crime that is responsible for a good deal of the growth apparent since 1881.

[1] For statistics as to the number of persons brought to trial in these years see Table VI on p. 241.

If the effect of the annexation on the crime returns of the country was marked, the impress that it left on civil judicial business was hardly less significant. For the ten years prior to 1881 litigation had been nearly stationary in Lower Burma. Between 1882 and 1884 the total number of suits instituted rose from 32,267 to 35,478. In 1885 the aggregate declined, and in 1886 there was a further general decrease, which was continued into the next year, so that the figure for 1887 fell to 32,367 or only 100 in excess of the total for 1882. The following year (1888) saw a real commencement in the restoration of order, and the litigation figures again rose. There was a further substantial increase in 1889, which may be said to reflect the almost complete renewal of the feeling of security that the disturbances following on the annexation had temporarily dispelled. The total of cases instituted in that year was 37,904 in Lower Burma. There was a falling off in litigation there in 1890, but the value of cases was higher than in the previous year, and the total of cases instituted in Upper Burma rose largely. This increase in the Upper province, despite the scarcity of 1896, has been maintained uninterruptedly ever since. In Lower Burma, on the other hand, there have been considerable fluctuations. The total for both portions of the Province was 58,143 in 1901, and 68,656 in 1903. Further statistics will be found in Table VII on p. 241.

The Indian Registration Act (III of 1877) is in force in Lower Burma. In Upper Burma the Registration law is that embodied in the Upper Burma Registration Regulation (II of 1897). The Financial Commissioner is Inspector-General of Registration in Lower Burma, Commissioners are Inspectors of Registration, and Deputy-Commissioners are registrars. There are also sub-registrars (treasury, subdivisional, and township officers) in each District. In Upper Burma the registering officers are ordinarily subdivisional or township officers, but the Financial Commissioner, the Commissioners, and the Deputy-Commissioners control and supervise registration work. There is an intimate connexion between registration and litigation. Thus during 1886 and 1887 there were marked decreases in the total of documents presented for registration in Lower Burma, while 1888 showed an increase which continued till 1893, when registrations fell in number. There was then a rise in 1894 and a second fall in 1895 and 1896, since which date registration work in Lower Burma has been growing steadily. As in the case of litigation, the increase in registration in Upper Burma has been regular and sustained. The total of documents registered in British Burma in 1880–1 was 6,107. In 1890–1 the figure had risen in Lower Burma to 11,013, while the aggregate in 1900–1 for both Upper and Lower Burma was 29,594. In 1903 the total was 40,731, and the number of registration offices was 146.

The main sources of revenue in Lower Burma under Burmese rule were a tax based more or less on the land cultivated, taxes on ploughs, transit dues, judicial fees and fines, and a few other imposts. In Upper Burma prior to the annexation the kings looked for their revenue in the first place to the *thathameda* or income tax, but also to the rent of state land, to receipts from forests and minerals (rubies, jade, and earth-oil), and to other items of receipt, such as water rate, fisheries, transit dues, monopolies, ferries, and bazars. In Lower and Upper Burma the revenues were farmed out to unsalaried native administrators (*myozas*, literally 'eaters of districts'), who paid a fixed sum on account of their *myos* into the royal exchequer, and retained the larger amount they had succeeded in extracting from the long-suffering taxpayers. With the abolition of this system in Lower Burma, after annexation, the finances of the country began to show an upward tendency. The revenue of Arakan expanded between 1826 and 1855 from 2·3 to 12·8 lakhs, while that of Tenasserim rose from Rs. 27,000 in 1829 (three years after its annexation) to 8·3 lakhs in 1855. Between 1855 and 1882 the revenue of Lower Burma increased from about 1 to 3 crores of rupees. This total includes all receipts, whether eventually credited to Provincial revenues or not, as well as the incomes of municipalities and 'Excluded' Local funds.

Finance.

All items of the revenue of Burma, other than those derived from municipal and purely local sources, fall into one or other of two classes. They may be treated as Provincial, in which case they are at the disposal of the Local Government, or as Imperial, in which case a portion returns into the country in the form of payments, the balance being absorbed into the Imperial exchequer (see chapter on Finance, Volume IV, chapter vi). The financial relations of the Local and Supreme Governments have for the last quarter of a century been regulated by periodical settlements. The first of these was made in 1878, and further settlements took place in 1882, 1892, 1897, and 1902. Till 1897 the finances of Upper Burma were excluded from this arrangement, but in that year the Upper Burma accounts were also provincialized and included in the terms of the 1897–1902 settlement.

Under the first settlement with the Government of India, that of 1878–9, the Imperial exchequer received five-sixths, and the Provincial one-sixth, of the revenue of the Province. Under the scheme which came into operation in 1882, fixed percentages of land revenue, export duties, and salt revenue, and the whole of the receipts and charges of certain departments, were assigned to the Province. At the same time, half of the receipts and expenditure under the heads Forest, Excise, Stamps, and Registration became Provincial. The 1882 settlement was not favourable to Burma; only in the first and last years

of its currency was there a Provincial surplus. In each of the other three years there was a deficit, which had to be met from Imperial revenues. The average annual receipts and expenditure during the currency of this settlement were—Imperial and Provincial combined, receipts 2·73 crores, charges 1·60 crores; Provincial alone, receipts 1·29 crores, charges 1·35 crores. In 1887–8, in lieu of a fresh quinquennial settlement, a provisional arrangement was entered into by which the terms of the previous settlement were continued with certain modifications, the chief of which fixed the shares of land revenue at two-thirds Imperial and one-third Provincial, and a special assignment of $4\frac{3}{4}$ lakhs was granted to Provincial to cover the probable excess of expenditure over revenue. This arrangement was continued up to 1889–90, when the Imperial share of excise receipts and charges was increased to three-fourths, and the receipts and charges in connexion with income-tax were equally divided, the loss thus caused to Provincial being adjusted by a contribution from Imperial. During the five-year period covered by these arrangements, the combined Imperial and Provincial receipts and charges averaged 3·33 crores and 1·70 crores yearly, and the Provincial alone 1·51 crores and 1·45 crores. The quinquennium was one of economic progress and closed in conditions of material prosperity. Under the settlement of 1892 the Provincial shares of land and fishery revenue were reduced to one-fourth, while that of stamp revenue was raised from one-half to three-fourths. These and other changes caused a loss to the Provincial government, which was met in part by an increase in the lump grant from Imperial to Provincial, fixed at $41\frac{1}{2}$ lakhs per annum. The average annual receipts and charges during the currency of the 1892 settlement were: under Imperial and Provincial combined, 4·26 and 2·19 crores respectively, and for Provincial alone, 2·01 and 2·03 crores. The settlement was, on the whole, a favourable one from the Provincial point of view, though the credit balance at its close was lower than at its commencement.

Upper Burma finance may be said practically to date from the year 1887–8. At the outset the revenue was small; but it increased steadily and at the end of the decade ending 1897 was double what it had been at the commencement, and this despite the fact that the last year of the decade (1896–7) was a season of scarcity marked by a substantial diminution in land revenue. With the settling down of the country after annexation cultivation was largely extended, and the progress of settlements raised the revenue total. Forests and Railways also showed very large increases. The average annual receipts and expenditure during the ten years in question were 1 crore and $1\frac{3}{4}$ crores respectively.

The year 1897–8 saw the commencement of a fresh quinquennial

settlement. It was the first which comprised the finances of the Province as a whole. Under its terms the Provincial share of land revenue and excise was raised to two-thirds and a half respectively, and the lump sum grant from Imperial to Provincial was reduced from 41½ lakhs to 39 lakhs. During the currency of this settlement the total receipts and expenditure of the Province averaged 6·93 and 4·20 crores annually, and the Provincial share averaged 3·47 and 3·26 crores respectively. On the whole the period covered by the settlement was one of material prosperity. The harvests were good; there were large extensions of cultivation, and land revenue settlement operations resulted in a rise in the rate of assessments over a large area. In each year of the quinquennium both revenue and expenditure exceeded the standard figure very considerably, and the period closed with a Provincial credit balance of 120 lakhs, a sum nearly four times as great as the balance in hand at its commencement.

By the settlement of 1902 the Provincial share of land revenue receipts was reduced from two-thirds to one-half, and that of excise revenue and expenditure from one-half to one-third.

Table VIII at the end of this article (p. 242) shows the average receipts under the main heads of revenue during the decades 1881–90 and 1891–1900, side by side with the actual receipts for 1900–1 and 1903–4. The figures are illustrative of the steady growth of revenue during the past twenty years. Table IX (p. 243) indicates the fluctuations in Provincial expenditure during the same period.

Land revenue.

The principles that underlie the land tenures of the Province have been indicated in an earlier paragraph. In Lower Burma a permanent right of use and occupancy in land may be acquired by prescription or by virtue of a specific grant from the state. In early days a theory seems to have sprung up that the people of the country had, of their own motion, surrendered a portion of their produce to the monarch, as a return, so to speak, for his assumption of the arduous and responsible duties of ruler. The theory is based, no doubt, on a democratic fiction; and, whatever its merits may be, the principle that the permanent right of use and occupancy aforesaid does not free land in Lower Burma from its liability to pay revenue has never been seriously disputed. In Upper Burma the crown's ownership in the soil was unmistakably affirmed for all future time by the Upper Burma Land and Revenue Regulation (III of 1889), which declares the proprietary ownership of the state in all waste land and in all islands and alluvial formations, as well as in land known under the Burmese régime as royal or service land. At the same time it was recognized that there was land in Upper Burma in which the full proprietary title of the crown had been extinguished, much as in Lower Burma, by the prescriptive rights of private indi-

viduals in the past. In the case of this land the ownership appeared, moreover, at first sight, to have passed more fully away from the state than in Lower Burma, since for some time prior to the annexation the sovereigns of Upper Burma had abstained from levying land revenue on it, although rent was paid on state land. It is more than probable, however, that this abstention was due, not to the idea that the Burmese government had relinquished all rights in private land, but to the fact that the primary source of revenue in pre-annexation days was the *thathameda*. This tax—which appears in the first instance to have been a proportion of the produce of the fields, and at one time to have been actually taken from the grain-heap and paid in kind by all classes of landholders—gradually assumed a form which caused its intimate connexion with the land and its fruits to be lost sight of, and, by the time the British came into occupation, had developed into something that may be described as approximating more closely to an income-tax than to any other form of impost. However that may be, the Upper Burma Land and Revenue Regulation established the right of Government to demand land revenue from the holders of non-state, no less than from the holders of state land; and this right, even when not actually enforced since then, has been held to be only temporarily in abeyance. Where both classes of land are assessed to land revenue, the private landholder has the advantage in a lower assessment and in full rights of transfer. In the case of all but non-state land there are certain restrictions on the right of alienation. Thus in Lower Burma transfers of land granted or leased by Government are forbidden within five years of the execution of the grant or lease (or within a longer period if exemption from land revenue has been allowed), without the previous sanction of the Deputy-Commissioner; while in Upper Burma no transfer of state land held on lease can be made to a non-agriculturist, or to a person who is not a native of Burma, without the previous sanction of the township officer.

As has been already stated, Burma is a *ryotwāri* Province: that is to say, the cultivator, as a general rule, pays his land revenue to the state direct and not through the medium of a landlord. In the early days of the British occupation of the Lower province, an attempt was made in Arakan by the revenue officials, fresh from a *zamīndāri* Province, to erect the village headman, on whom the collection of the revenue devolved, into a species of *zamīndār*; but this policy does not appear to have been a success and was not persisted in. The assessments of revenue are fixed, subject to revision, at periodical settlements for which no uniform period of duration has yet been prescribed. The term seldom exceeds fifteen years in Lower Burma; and in Upper Burma, where a regular settlement policy is still in process of development, fifteen years has been the maximum up to now. The whole of the Province

has not yet been brought under regular settlement, but only a comparatively small portion of the cultivated area of Lower Burma remains unsettled. In Upper Burma the settlement of the greater part of the dry zone Districts is either complete or approaching completion, and a commencement has been made on the remoter wet areas; but the land revenue system in the Upper province is still in a state of transition. Settlement operations are more elaborate in Upper than in Lower Burma; the crops are more varied than in the Lower province; the field season is longer, and additional labour is thrown on the settlement officer by the investigations entailed in preparing a record of rights and occupation, and in adjusting the *thathameda* on the classes who do not depend solely on agriculture for their livelihood. In Upper Burma the District is settled as a whole, in Lower Burma in tracts of varying size. In the unsettled Districts of Upper Burma non-state land is ordinarily not assessed to land revenue, and state land pays at rates based on local custom and varying from locality to locality. In the second edition of the *Imperial Gazetteer* it was stated that the basis of the land revenue settlement in Burma had been '20 per cent. of the gross produce after many deductions, payable to Government in money at the rates of the price of grain in the circle within which the land is situated.' It is now a generally accepted principle throughout India that land revenue rates should be calculated on the net and not on the gross produce; and, speaking generally, it may be said that 50 per cent. of the net produce is what is looked upon in Burma as the theoretical maximum. The actual rates are, however, as a rule far below this. In Lower Burma the provisional maximum is one-fourth of the net produce, and rates varying from one-tenth to one-sixth are the most common. To arrive at the rates the land is first classified according to its fertility, the approximate productiveness of each class is ascertained by crop measurements, and the money value of the gross produce is arrived at after a consideration of average prices extending over a considerable period of years. From this is deducted the cost of cultivation, computed on a liberal scale, and on the net remainder the rates are based. In the settled Upper Burma Districts non-state land is ordinarily assessed at rates 25 per cent. lower than those at which state land is assessed, while in a few Districts all *ya* land (see page 150), whether state or non-state, is assessed at a single rate. A fallow rate of two annas per acre is levied in Lower Burma on land which has been left uncultivated in order to allow it to recover from exhaustion, or as a result of causes over which its occupier had no control; otherwise a rate ranging between two annas an acre and the normal cultivation rate is ordinarily levied. In Upper Burma the assessment is levied on matured crops only, and rates are not assessed on either failures or fallows.

It is practically impossible now to form anything but the roughest estimate of the amount of land revenue assessed and collected by the Burmese kings in the days that preceded the annexation of the Lower Province. In addition to a form of income-tax, the amount of which was gauged by the area of land cultivated by each assessee, a tax was paid in Arakan and Tenasserim, prior to 1826, on every plough used; and it was not till 1831 that any attempt was made by the British to assess the cultivated land by area instead of by the plough. Before the second Burmese War added Pegu to the Indian Empire, the tax upon the land cultivated in that province was according to the yokes of cattle employed, the only exception to the general rule being Prome, where half the produce (apparently the gross produce) was taken from some lands and no other demand was made on the occupiers. The revenue of Pegu prior to annexation was nominally nearly 15 lakhs, and to this total private exactions on the part of the minor officials are computed to have added 10 lakhs more; but this figure represents only the revenue that was not paid in service or in kind, and there are no means now of separating the purely land revenue from the other items, such as transit dues, timber revenue, and the like, which went to make up the aggregate. In Upper Burma in 1884, i.e. immediately before annexation, the amount collected from the rent-paying royal rice-fields, cultivated grounds, and gardens was rather more than 3¼ lakhs in money payments, and a little over a million and a half baskets of paddy. These rents, however, formed only a small portion of the total revenue of the kingdom; the greater part was furnished by the *thathameda*, which in 1884–5 brought a total of 36 lakhs into the royal coffers. In the first two years of the reign of Mindon, the immediate predecessor of Thībaw, a land tax of 12 to 15 annas per acre was levied on rice land, and from 10 to 12 annas per acre on land producing island crops in Sagaing District, but on the introduction of *thathameda* this tax was abolished. In Minbu District under Mindon's predecessor, Pagan Min, the land tax appears to have been heavier in incidence, nearly Rs. 3 per acre in certain cases. King Mindon himself would seem in this District to have introduced a land tax on one-tenth of the produce on all classes of land. In Meiktila the government share of the produce of state land was taken at one-fourth, and the assessment was fixed at Rs. 15 per *pe* (1·75 acres); but there are no signs of any permanency in the revenue system of the Burmese monarchs.

Turning now to the actual outcome of the British settlements, we find that the rate now levied on rice land very seldom exceeds Rs. 7, or falls below Rs. 1–4 per acre. On *ya* land the rates are lower and do not as a rule rise much above Rs. 1–8, at times being as low as 3 annas per acre. *Kaing* land rates (page 150) vary from Rs. 7 to Rs. 1–4 per acre. Garden land is, as a rule, assessed at lower rates than rice land. Remissions

of revenue are granted when crops have been wholly or partially destroyed by flood or drought. These remissions may be either entire or partial, according to the extent of the loss sustained, but are not ordinarily granted unless the loss exceeds one-third of the estimated ordinary full crop of the holding concerned. Temporary exemptions from land revenue are allowed under certain conditions in the case of uncleared land granted or leased by Government for purposes of cultivation. The maximum period of exemption is fifteen years.

In 1881 the average incidence of land revenue in its narrowest sense was Rs. 1·7 per head of the population of the Lower province. By the end of the succeeding decade, Upper Burma had been added to the Indian Empire; and the peculiar revenue conditions obtaining there had reduced the average incidence of land revenue proper for 1891 to Rs. 1·2 per head for the whole Province. Since then successive settlements in Upper Burma, coupled with an extension of cultivation that has outstripped the growth of population, have added to the land revenue to an extent that in 1901 raised the incidence to Rs. 1·9 per head, or above the average for 1881. As *thathameda* is gradually replaced by land revenue in Upper Burma, this figure will tend to rise still farther.

The net demand of land revenue proper was 66 lakhs in 1880–1, 94 lakhs in 1890–1, 180 lakhs in 1900–1, and 218 lakhs in 1903–4. The *ywathugyi*, or village headman, is the revenue collector in Burma. He is remunerated by commission varying from 3 to 10 per cent. on his collections.

Capitation tax has been a source of revenue in Lower Burma from the earliest days of British dominion. It does not appear to have been levied by the native rulers, but was introduced soon after the cession of Arakan and Tenasserim in 1826. In 1831 it was fixed at Rs. 5 on married men, Rs. 3 on widowers, and Rs. 2 on bachelors. In 1876 this was altered to a rate not exceeding Rs. 5 for married men, and Rs. 2–8 for widowers of between eighteen and sixty years of age; and it has remained at this figure ever since. In several of the larger towns of Lower Burma a land rate not exceeding one pie and a half per square foot on land covered with buildings and Rs. 3 per acre on land not so utilized is levied in lieu of capitation tax. The capitation tax produced 29 lakhs in 1880–1, 36 lakhs in 1890–1, and 45 lakhs in 1900–1. In 1903–4 the demand was 49 lakhs. Exemptions from the tax are granted to certain classes, such as Government servants and pensioners, village headmen, priests, persons who pay income-tax, and the like.

The original connexion between *thathameda* and land revenue has been referred to in an earlier paragraph. *Thathameda* was introduced into Upper Burma during the reign of Mindon Min. The origin of the word is doubtful. Various derivations, Sanskrit and other, have been suggested, but none has obtained popular acceptance. In the earliest

years of its imposition the incidence of the tax was light; but about 1866, when its origin as a fixed proportion of the cultivator's grain-heap had dropped out of sight and it had become a kind of income-tax, it was raised to the level at which it was found when the British took over the administration of the country, namely, at about Rs. 8 to Rs. 12 per household. It was continued by the British Government, and the principle on which it has since been assessed is that a tract enjoying ordinary prosperity should pay a sum not exceeding Rs. 10 per annum for each household that it contains. Rates are not, however, now fixed annually. In settled Districts the rates sanctioned in the Local Government's orders on the Settlement Report are levied. In unsettled tracts the normal rate, generally Rs. 10 per household, is assessed. The unit for which rates are fixed is generally the village; and the exact share to be paid by each individual household is determined by village assessors or *thamadis*, who fix the demand above or below the average according to the assessee's means. The average incidence of the tax in 1901 was Rs. 8–8 per household. No maximum or minimum limit has been fixed for individual payments, but in practice these range ordinarily between Rs. 30 and 8 annas. Exemption from *thathameda* is granted to Government servants, the old and infirm, religious mendicants, and a few other classes. Immediately before the annexation of Upper Burma the *thathameda* produced 36 lakhs. The collections of 1890–1 amounted to 44 lakhs, those of 1900–1 to 58 lakhs, and those of 1903–4 to 46 lakhs.

It is generally acknowledged that *thathameda* presses somewhat heavily on the agricultural classes of Upper Burma; and one of the most important features of the existing revenue policy is a scheme the object of which is to retain the total present amount of taxation on non-agricultural incomes unchanged, but so far as possible to ensure that a greater share than heretofore of that taxation should be borne by the richer non-agriculturists, and to substitute assessment in the form of acre rates on land for that part of the *thathameda* which represents taxation on income derived from land. This principle is applied at each fresh settlement, and as it is introduced *thathameda* will tend to diminish. It is still, however, and will continue for some time to be, the main source of revenue in the Upper province.

Fisheries.

Fisheries both in Upper and Lower Burma contributed towards the revenue of the country before the days of British occupation, and are still one of the most profitable of the assets of the Province. There are two main classes of fishery revenue, the proceeds of leases of fisheries and net licence fees, the greater part of the realizations being of the former class. The fishery area of the Province is not susceptible of any appreciable extension. In spite of this, however, the fishery revenue has increased sensibly during the past two decades. In 1880–1 the total collections amounted to 14

lakhs. By 1890–1 the annexation of the Upper province had raised the figure to 19 lakhs. In 1900–1 the receipts amounted to 23 lakhs, and in 1903–4 to 29 lakhs. The more important of the leased fisheries are in the delta Districts; and the subdivision of large fisheries, with other improvements in methods of control (largely the outcome of investigations recently conducted by Major Maxwell in the delta areas), have been weighty factors in the increase of late years.

Other considerable items classed under Land Revenue in the larger sense of the term are receipts from water rates, from the duty on oil extracted from the oil-fields, and the rent paid by the Burma Ruby Mines Company. Under this head come also the receipts from bird's-nest and jade-stone revenue. The incidence of Land Revenue in its broader meaning, which includes *thathameda*, capitation tax, and the other forms of revenue indicated above, was in 1901 Rs. 2–12 per head for Lower and Rs. 2–8–6 for Upper Burma. Comparing this with similar figures for other Provinces, it will be found that the Lower Burma figure is exceeded only by Sind and the Upper Burma figure only by Sind and Berār.

Miscellaneous revenue.

The existing opium policy of Burma was introduced in 1894. It is the same in the two portions of the Province, but is at two different stages of application. It has as its basis the view that the drug is exceptionally deleterious in the case of Burmans. In Lower Burma the possession of opium in small quantities up to a certain limit (3 tolas or rather less than 1½ oz.) is allowed in the case of non-Burmans and such Burmans as are registered as having been opium consumers prior to 1894. In the case of non-registered Burmans possession is allowed only in a few special cases, e. g. to tattooers. In Upper Burma, where the object has been to preserve as far as possible the law in force at the time of annexation, registration of Burmans as consumers is not permitted, and, with a few minor exceptions, no Burman is allowed to possess opium. Non-Burmans may possess the drug, as in Lower Burma, up to an individual limit of 3 tolas.

For all practical purposes it may be said that opium is imported and held in bulk solely by Government. Licensed vendors obtain their supplies from Government treasuries and retail it to the actual consumers. The number of licences for the retail vend of opium is strictly limited, and till recently they were sold by auction; but this system has now been discarded in favour of selection by Government on payment of fixed fees, as it was found that the auction system tended to encourage smuggling by the vendors. The taxation of opium, which is derived from a fixed duty per seer (2 lb.) plus vend fees, is very high. The price at which the drug was supplied to the licensees in Lower Burma was Rs. 33 per seer in 1901–2 and Rs. 60 per seer in 1902–3. As

already mentioned, only those Burmans are registered in Lower Burma who can show that they became habituated to the drug prior to the introduction of the policy of 1894. The experience of a few years showed, however, that the first list of registered consumers did not contain the names of all persons who might have claimed the privilege of registration; and in 1900 the registers of consumers were reopened, to be finally closed on March 31, 1903. As no person who has acquired the opium habit since 1894 can be registered, the number of registered Burman consumers will in process of time diminish and must eventually altogether disappear. Owing to these restrictions, and to the high taxation of the drug, opium smuggling is rife, and special excise establishments have recently been sanctioned to cope with it. The receipts from opium revenue, which are credited to excise, amounted in 1890–1 to 21 lakhs, in 1900–1 to 27 lakhs, and in 1903–4 to 45½ lakhs.

Opium is not grown in Burma proper, though in portions of the Shan States it is cultivated for local consumption. The Province is mainly supplied from India with Bengal opium. Mālwā opium has been tried, but did not find favour among the opium consumers.

The possession of *gānja*, except in special cases, has been prohibited; the large seizures of the drug that have been made recently show, however, that it continues to be smuggled into the country.

Locally made salt, produced along the sea-coast, used, in the years succeeding the second Burmese War, to form a substantial portion of the salt supply of the Province, but has since then yielded to a large extent to the imported article. Indian or foreign salt has long paid duty at the rate of R. 1 per maund (82$\frac{2}{7}$ lb.), to which it was reduced in India proper in 1907. Salt made in the country was formerly taxed by levy of fees on the pans, cauldrons, or other vessels used in boiling it. In 1902, however, a tax of 8 annas per maund on the output was introduced as an experimental measure in two Lower Burma Districts, and this system of taxation has since been extended. In inland Districts the production of local salt is insignificant, and is carried on, under licence, in sterile tracts and in the face of considerable difficulties by the most indigent section of the community. In parts of Upper Burma the industry has approached the border-line of extinction. There are no reliable statistics of the total amount of salt consumed in the Province. In 1900 it was calculated that 794,000 cwt. of foreign salt passed out of bond, and for the same year the estimated local output was returned at 415,000 cwt.; but a comparison of these totals with the figures of the previous year shows that a portion of the requirements of the year must have been met from stocks held over from the preceding twelve months. The gross salt revenue was 15¾ lakhs in 1890–1, 13½ lakhs in 1900–1, and 15½ lakhs in 1903–4.

The imported salt comes for the most part from Germany and

England, the former country being the largest supplier, but Aden and Madras salt are beginning to find a market. Salt is exported by land to China and Siam, the amount in 1903-4 aggregating 24,500 cwt. The consumption of salt per head of population in Burma seems to be about 12 lb. per annum, but the matter is obscured by the system of assessment on local salt, and the estimate can at best be only approximate.

The main principles underlying the liquor excise policy of Upper Burma are practically the same as those which have been shown to form the basis of the Provincial opium policy. One of the chief objects aimed at is to keep intoxicating liquor as much as possible out of the reach of the pure Burman, whose inability to refrain from alcoholic excess is notorious. In Lower Burma special restrictive measures for the indigenous population were not introduced when the Province first came under British dominion, and the Lower Burman has thus acquired a certain title to be absolved from exceptional treatment. In Upper Burma, on the other hand, the British have perpetuated the excise policy in force at the time of annexation; and although the Upper Burman cannot be punished for the possession of liquor if it is in quantities below the maximum fixed by the Excise Act, the sale to him of any intoxicant except *tāri* is prohibited, under penalty, by special conditions attached to the licences issued to liquor vendors. The manufacture and sale of spirits and fermented liquor may be carried on only under licences granted by Government, and the prohibition of the sale to Upper Burmans is thus susceptible of enforcement. Persons other than Upper Burmans may possess liquor in small quantities. *Tāri*, the fermented juice of the toddy-palm, stands on a different footing from other intoxicating liquors in Burma. It is generally looked upon as less harmful than other forms of drink, its consumption was more or less countenanced under native rule in Upper Burma, and over a considerable portion of the rural areas of the Upper province there is practically no restriction on its production and consumption. Spirit is manufactured at four private distilleries organized on the English pattern, where it pays duty at Rs. 6 per gallon, and in parts of the Province in native out-stills. *Tāri* and *hlawzaye* are the principal country fermented liquors produced in Burma; but there are other kinds, and in respect of their manufacture the members of some of the backward hill communities have been exempted from the provisions of the Excise law. The Excise Act (XII of 1896) has been extended to a few stations in the Shan States and the Chin Hills. The revenue from liquor in Burma falls under the following heads: (*a*) Customs duty on imported foreign liquor and spirits; (*b*) excise duty on local distillery liquor and spirits; (*c*) licence fees for the sale of local distillery and foreign liquor and spirits; (*d*) licence fees for the manu-

facture and sale of country spirits; and (*e*) licence fees for the sale of country fermented liquor. Licences to sell are disposed of annually by auction. The net revenue under all heads during the decade 1891–1900 averaged 21 lakhs. In the year 1900–1 the collections were 26½ lakhs, and in 1903–4 33⅓ lakhs. The average incidence of the liquor excise revenue per head of the population was in 1881, 9·3 annas; in 1891, 8·6 annas; and in 1901, 9·2 annas. There is nothing to show that the indigenous liquor-drinker is at all fastidious in his tastes. He is usually content with the form of alcohol that is most readily procurable; but if figures speak aright, he appears of late to be showing a preference for country fermented liquor over country spirits—a tendency which there is no need to deplore. On the whole, local liquor is fairly well able to hold its own against the imported article. The trade returns show that the quantity and value of foreign spirits imported from foreign countries into Burma in 1890–1, 1900–1, and 1903–4 were as follows:—

	Quantity.	Value.
	Gals.	Rs.
1890–1 . . .	154,552	9,87,162
1900–1 . . .	190,074	11,69,984
1903–4 . . .	262,086	16,75,314

Such efforts as have been made by Government to restrict consumption are indicated above. Falling in as it does with the precepts of their religion and immemorial custom, the policy of prohibition meets with universal approval but no active co-operation from the people of the country.

The stamp revenue of the Province is made up of receipts from (*a*) judicial and (*b*) non-judicial stamps, the former levied under the Indian Court-fees Act and the latter under the Stamp Act. The stamp revenue during the ten years 1891–1900 averaged 16 lakhs. The gross receipts in 1900–1 amounted to nearly 21 lakhs, and in 1903–4 to 29½ lakhs.

The demand for both judicial and non-judicial stamps is affected generally by the prosperity or otherwise of the people of the country, but commercial activity has not always the same effect in the case of both classes of stamps. Thus it was said of the decrease under non-judicial and the increase under judicial stamps in 1893–4 that the 'variations were due to the same causes: namely, depression of trade and tightness of the money market, which impeded the transfer of money and led to litigation for the recovery of the advances made.'

The Indian Income Tax Act, 1886, was extended to Lower Burma in 1888–9, and with effect from April 1, 1905, was brought into operation through the whole of the Lower province; but in Upper

Burma it applies only to Government and railway servants, and to the city of Mandalay, where it was brought into force in 1897–8. The tax produced 8 lakhs on an average during the decade ending 1900, and 11 lakhs in 1900–1. Notwithstanding the raising of the maximum income excluded from Rs. 500 to Rs. 1,000 in 1903, the income-tax receipts of 1903–4 amounted to $11\frac{3}{4}$ lakhs.

Customs duties are levied, under the Indian Tariff Act (VIII of 1894), on goods brought by sea from foreign countries into the ports of the Province; and there is also a duty on exports of paddy, rice, and rice flour (see Volume IV, chapter viii). This export duty, which brings in a larger revenue than all the varied items of import, is 3 annas per maund of $82\frac{2}{7}$ lb. Nearly the whole of the customs revenue is credited to Imperial, Provincial receiving only a few minor items, such as warehouse and wharf rents and miscellaneous receipts. Customs expenditure is a wholly Provincial charge. For the ten years ending 1890 the annual receipts from customs averaged $56\frac{1}{2}$ lakhs, and during the following decade nearly 77 lakhs. The actual collections in 1900–1 amounted to 92 lakhs (of which 56 lakhs represented export duty on paddy and rice), and in 1903–4 to nearly $1\frac{1}{3}$ crores.

Local and municipal.

Municipal administration in Burma dates from 1874, when the British Burma Municipal Act became law, and Rangoon, Moulmein, Prome, Bassein, Akyab, Toungoo, and Henzada were constituted municipalities, to be administered by committees appointed by the Chief Commissioner. In 1882 and 1883 the elective system was introduced into all these places except Prome. A certain proportion of the members of each committee was still, however, appointed by Government, and, except in Rangoon, the elections evoked no great interest. In 1883–4 the Act was extended to Pegu. On December 1, 1884, the Burma Municipal Act (XVII of 1884) came into force; and in January, 1885, the eight towns already mentioned, as well as Paungde and Yandoon, were constituted municipalities under it. Between 1885 and 1888 twelve more municipalities were constituted in Lower Burma, but already the discovery had been made that the elective system was not an unqualified success. The new committees were accordingly formed ordinarily of members nominated by the Local Government; and when in 1887 the municipal system was extended to Upper Burma, the Regulation (V of 1887) whereby the necessary legislation was effected provided for the appointment, and not for the election, of members of municipal committees. The elective system now obtains only in nine of the municipalities of Lower Burma and in Mandalay. The Mandalay municipality was constituted in 1887; and by the end of 1887–8 fifteen other municipalities had been established in Upper Burma under the Regulation. Events proved, however, that some of the smaller munici-

palities then created were not really ripe for municipal administration, and three of them were subsequently abolished. Two new Lower Burma municipalities, those of Letpadan and Gyobingauk, were created in 1894–5, a third (Thonze) in 1897, and a fourth (Allanmyo) in 1900. One of the earliest measures to engage the attention of the Burma Legislative Council in the first year of its existence (1897) was a Municipal Bill. The Lower Burma Municipal Act of 1884 had been adapted, with only a few modifications, from an Act passed for the Punjab; and thirteen years of experience of its provisions had shown that, to suit the requirements of the Province, it needed thorough revision. Steps were accordingly taken to produce an entirely new legislative measure, the Burma Municipal Act (III of 1898). This Act was applicable to Mandalay as well as to Lower Burma, and power was taken to extend it to other Upper Burma municipalities. This extension has been made in eight cases, and proposals for the extension of the Act to the remaining five Upper Burma municipalities have recently been sanctioned.

In April, 1905, there were forty-two municipalities in Burma. Two of these (Rangoon and Mandalay) contained over 100,000 inhabitants, 17 more than 10,000 but less than 100,000, and 23 less than 10,000 inhabitants. The average incidence of municipal taxation in 1903–4 was in Rangoon Rs. 6–8–4 per head of population ; and in the remaining municipalities of the Province, Rs. 1–10–3 per head. The total number of members of municipal committees in 1904–5 was 543, of whom 161 were *ex officio*, 268 nominated, and 114 elected. In all 160 were Europeans. The president of the Rangoon municipality is an officer of the Burma Commission who devotes his whole time to municipal and town lands matters. In the other municipalities the president is the Deputy-Commissioner of the District or the chief civil officer of the station concerned.

At the close of 1904–5 there were fourteen 'notified areas' administered by town committees who exercise certain municipal functions. These are practically embryo municipalities.

Taxes on buildings and lands, lighting and scavenging rates, and taxes and tolls on carts and other vehicles are the most common sources of municipal income ; but the real mainstay of municipal revenues in the interior is the sum of the fees derived from markets and slaughterhouses. A water tax is levied in Rangoon, Moulmein, and Prome. Considerable sums are spent annually on conservancy, hospitals, education, and works of a public nature. A special Sanitary Engineer has been appointed to assist municipal committees in preparing schemes for conservancy and water-supply, and it is probable that in the near future the expenditure on water-supply schemes will increase appreciably. The scheme by which Rangoon has till recently been supplied with

water from the Victoria Lake north of Kokaing has been found insufficient for the requirements of the rapidly growing population of the city, and a project for a new supply from the more remote Hlawga reservoir has been recently carried out by Government for the municipality. A scheme for supplying Moulmein with water has also been completed by Public Works agency, and a project for water-works for Akyab has been prepared. Prome has water-works which were completed in 1885. Municipal accounts are audited at regular intervals by a staff of auditors under the Inspector of Local Funds Accounts.

The total ordinary municipal income and expenditure of Rangoon and other municipalities in Upper and Lower Burma in 1903-4 is given below, in lakhs of rupees :—

	Income.	Expenditure.
Rangoon	24	21
Other municipalities . .	25	33
	49	54

Particulars of income and expenditure (ordinary and extraordinary) for earlier years are contained in Table X appended to this article (p. 244). Omitting the income head 'Loans' and the expenditure heads 'Water-supply and drainage,' there is little in the figures which calls for comment. In nearly every case a fairly steady expansion has taken place during the twelve-year period covered.

There are no District or local boards in Burma, but the Deputy-Commissioner of each District has at his disposal a Local fund known in Upper Burma as the District fund, and in Lower Burma as the District cess fund. The income is derived in Lower Burma from a cess on land (levied at 10 per cent. on the land revenue assessments), and in both portions of the Province from ferries, cattle-pounds, markets, &c.; and the Deputy-Commissioner applies the proceeds to the upkeep of minor roads and other local objects, such as resthouses, cattle-pounds, District post[1], &c. In 1903-4 the total receipts from these funds amounted to 27.2 lakhs, and the total expenditure to 26 lakhs, the main items of outlay being as follows:—

	Rs.
Public works	12,73,000
Education (in Lower Burma) . .	2,74,000
District post	1,23,000

Public works.

The control of the Public Works department in Burma till 1905 was in the hands of a Chief Engineer, who is also secretary to Government in the Public Works department. Under the Chief Engineer the Province was divided for Public Works purposes into five circles, each in charge of a Superintending Engineer.

[1] The District post was taken over by the Imperial Post Office in 1906.

One of the charges was an Irrigation circle, which included all the Government irrigation works in the Province, while the other four dealt with buildings and roads and other works, excluding irrigation, within their respective boundaries. Each circle consists of a number of divisions in charge of Executive Engineers; the number has not been constant, but there were recently twenty-four buildings and roads divisions and five irrigation divisions. In 1905, in order to cope with the rapidly developing needs of the Province, a second Chief Engineer, a sixth Superintending Engineer for the charge of an additional buildings and roads circle, and a Sanitary Engineer with the status of a Superintending Engineer were sanctioned, and the charges are now being distributed. All public works paid for out of Imperial and Provincial revenues are carried out by the department, which also, when so required, executes works the cost of which is defrayed by municipal, Port, District, or District cess funds.

The statement of Provincial expenditure appended to this article (p. 243) shows that the average outlay on public works, ordinary and irrigation, which during the ten years ending March 31, 1890, was less than 25 lakhs, rose during the following decade to 46 lakhs, and that the actual figure for the year 1900–1 was 104 lakhs. Taking all heads (Imperial, Provincial, and Local), the expenditure for the last-named year exceeded 128 lakhs. From Provincial funds nearly 17 lakhs was spent on irrigation, 42 lakhs on public buildings, and 30 lakhs on communications. In 1902–3 the Provincial expenditure aggregated 102½ lakhs, and in 1903–4 the total expenditure in the Public Works department, Imperial, Provincial, and Local, was 139¼ lakhs. The main land and water communications and the principal irrigation works have already been noticed. During the past twenty years Upper Burma has been supplied with courthouses, police stations, military police barracks, jails, and an enormous number of other public buildings; but, with the exception of one or two of the larger jails, no single work of any great importance has been undertaken. Lower Burma at the commencement of this period was well furnished with public buildings of every description, but their number has been very considerably added to since. The recent additions include the present Government House, the Secretariat offices, and the Central jails at Moulmein and Insein. Work has been commenced on the new General Hospital at Rangoon, a project estimated to cost 27 lakhs, and will shortly be begun on the new Chief Court, Currency buildings, Press buildings, and Museum. Designs for extended General Post and Telegraph Offices are under preparation. The work done in the way of lighthouse construction in the past is dealt with in a later paragraph.

Few notable public works have been undertaken by local bodies during the past twenty years save in Rangoon. The principal municipal

water-supply schemes that have been executed are referred to in an earlier paragraph under the head of Local and Municipal. Considerable sums have been spent in the past by the Port Commissioners of Rangoon on the improvement of the port, and the accommodation for shipping has of recent years been largely increased. Among other works not falling into any of the previous categories may be mentioned the Anglican Cathedral in Rangoon, to which a tower is now being added, and the Roman Catholic Cathedral in the same city at present in course of construction.

Army.

For military purposes Burma forms a separate division, directly under the Commander-in-Chief, which was constituted in 1903. The total number of troops stationed within the Province on June 1, 1903, was: British, 3,812; Native, 5,674; total, 9,486. The military stations at present are Rangoon, Mandalay, Maymyo, Shwebo, Bhamo, Thayetmyo, and Meiktila. British infantry are ordinarily quartered at all the stations. British artillery are stationed at Rangoon only, where there is an arsenal. There are volunteer corps at Rangoon, Mandalay, and Moulmein, with detachments at all the principal stations. Their total strength in June, 1903, was 2,419, and about two-thirds were volunteer infantry, the balance consisting of Naval, Artillery, Engineer, and Mounted Rifle Corps. One of the corps (the Burma Railway Volunteer Corps) is composed almost wholly of the staff and employés of the Burma Railways Company.

There are four Port Officers in Burma, stationed at the ports of Rangoon, Bassein, Moulmein, and Akyab. They are all officers of the Royal Indian Marine. Rangoon possesses in addition an Assistant Port Officer. The Port Officer, Rangoon, is also Marine Transport Officer. At Mandalay there is a second Marine Transport Officer, also belonging to the Indian Marine, who is responsible for the working of the Government flotilla in the inland waters of Upper Burma. The Deputy-Commissioners of Kyaukpyu, Tavoy, and Mergui have been appointed Conservators of their ports. A sea-going steamer of the Royal Indian Marine is stationed at Rangoon for lighthouse and other duty. Three Indian Marine river steamers ply on the inland waters of the Province, and a fleet of 66 launches is employed for Government transport work. These latter are practically all in charge of native *serangs*. Pilots, whose licensing and control is provided for by the Lower Burma Pilots Act (XII of 1883), are employed for the navigation of vessels in the ports of Rangoon, Moulmein, Akyab, and Bassein. The strength of the service at the end of 1905 was as follows: Rangoon, 17 ordinary and 4 special pilots; Moulmein, 6 ordinary and 2 special pilots; Akyab 2, and Bassein 4 pilots. The pilots are of four grades in Rangoon and of three grades in Akyab and Bassein, and are paid by

fees proportioned in each case to the draught of the vessel piloted. There is a special river surveyor in Moulmein. The Port Officer, Rangoon, is Superintendent of lighthouses for Burma. The following lighthouses are maintained :—

Off the coast of Akyab District : Oyster Island, first lighted with a permanent light in 1892[1]; and Savage Island, at the mouth of Akyab harbour, constructed in 1842.

Off the coast of Bassein District : Alguada, on the Alguada Reef, due south of Cape Negrais, constructed in 1865.

Off the coast of Hanthawaddy District: China Bakīr, lighted in 1869 and re-erected in 1901 ; Eastern Grove, at the mouth of the Rangoon river, constructed in 1869 ; and Table Island, two miles from the Cocos Islands, erected in 1867.

Off the coast of Amherst District : Double Island, south of the entrance to the Salween, constructed in 1865 ; and Green Island near Amherst Point, also at the mouth of the Salween, constructed in 1903.

Off the coast of Tavoy District : Reef Island, at the entrance to the Tavoy river, constructed in 1883.

The construction of a lighthouse on Beacon Island, 4 miles north of Cheduba Island, is under consideration.

Light-vessels are stationed off the Baragua Flats and the Krishna Shoal, south of the mouths of the Irrawaddy ; and at the spit in the mouth of the Rangoon river.

Police and jails.

The Police department in Burma is administered by an Inspector-General and three Deputy-Inspectors-General, two for civil and one for military police. There is also a special officer in charge of police supply. The civil police force may be said to have been first regularly organized in 1861, when the Indian Police Act (V of 1861) came into force. A Superintendent of police was appointed for each District of the Province as it then existed, and was made immediately subordinate to the Inspector-General in Rangoon. The whole force then numbered 6,100 and cost 12 lakhs a year. In 1881 it consisted of 6,853 officers and men, and its cost had risen by over 2 lakhs. The disturbed state of the country about the time of the annexation of Upper Burma, and the necessity for the protection of the newly acquired territory, occasioned a large increase to the force ; and by 1891 the strength of the civil police in both sections of the Province had risen to nearly 16,000. For a short time, while the police force of Upper Burma was being organized, a special Inspector-General was appointed for the Upper province. Since 1891 the total of civil police has been reduced. The policy of curtailment began in 1892, and by 1895 the strength of the force

[1] The Oyster Island Light took the place of a lighthouse on Oyster Reef, which was built in 1876 and swept away by a cyclone in 1884.

had been lessened by more than 2,000 and brought down to its existing proportions. In 1901 the force was 12,879 strong, or in other words there was in Burma proper one civil policeman to every 13 square miles and to every 718 of the population. The strength and cost of the force in 1881, 1891, 1901, and 1903 are given in Table XI at the end of this article (p. 245).

Except in the superior grades and in urban areas the members of the force are recruited from Burmans, Talaings, Shans, and other indigenous races. The service is not popular, for the discipline that enlistment in the force entails is disliked by the men. As detectives the Burmese police are on the whole successful, but in matters of drill and the like they are not to be compared with the police of India proper. In 1888 a Committee was appointed to investigate the state of the police and to devise means for placing it on a more satisfactory footing. The main outcome of its recommendations was the division of the Lower Burma force into civil and military police, and the establishment at the head-quarters of Districts of police schools at which recruits and other members of the force receive systematic training. In 1891 the beat patrol system was inaugurated in the rural areas of the Province, and has been found to work satisfactorily. In 1899 the Rangoon Police Act came into force, and from the date of its enactment the Rangoon town police has been administered by a special Police Commissioner on a somewhat different footing from the rest of the force. It has occasionally been found necessary to invoke the aid of section 15 of the Police Act, and to station punitive police in specially criminal or ill-affected areas, making the cost of their maintenance a burden on the local residents. For several years after the annexation the annual total of punitive police did not fall below 1,000, but till quite recently none has been required since 1896. There is a special finger-print or criminal identification department in Rangoon which, since 1898, has carried on the system of identifying criminals by means of finger impressions. References are made to it from the Districts, and it has been the means of tracing a considerable number of previously convicted prisoners. At present the majority of the civil police are armed with *das* (sword-knives) and smooth-bore muskets, but arrangements are being made to substitute Martini-Henry smooth-bore carbines.

The Burma District Cesses and Rural Police Act (II of 1880) created a rural police for Lower Burma, the officers appointed under the Act being known as *kyedangyis* and *yazawut gaungs*. The Lower Burma Village Act (III of 1889) superseded this enactment so far as the constitution of the rural police force was concerned. Under the latter Act, petty officials known as 'ten-house' *gaungs* have been appointed to be rural policemen in Lower Burma, and have been invested with the powers and privileges of police officers The office of *gaung*

in charge of ten houses was a well-recognized feature of village administration in Burmese times. 'Ten-house' *gaungs* are not paid, but their duties are exceedingly light and their office gives them a certain standing. There are no rural police in Upper Burma, but in both Upper and Lower Burma the village headman has been empowered to search for and arrest any person who is liable to be arrested by a police officer in any of the circumstances mentioned in section 54 of the Criminal Procedure Code. The relations between the regular and rural police are in the main very satisfactory. The village headmen have petty magisterial functions and some of them receive enhanced powers. They also collect the revenue.

The military police in Burma may be said to have had their origin in the disorder that followed on the annexation of Upper Burma. In 1886, with a view to supplementing the work done by the troops, proposals were submitted to the Government of India for the enlistment of about 3,500 military police. Out of this nucleus grew the military police force of the Province, which in 1888 consisted of 19 battalions, numbering 17,880 men in Upper Burma, with a further force of 1,000 men in Lower Burma. The force was formally established under the Upper Burma Military Police Regulation in 1887. This enactment was superseded during the same year by the Burma Military Police Act, which created a military police for Lower Burma and incorporated it with the Upper Burma force. The rank and file of the military police consists almost entirely of natives of India, each battalion being commanded by officers of the Indian Army. The officers of the Upper Burma battalions are termed commandant and assistant commandant; those of the two Lower Burma battalions, adjutant and assistant adjutant. Since 1888 the force has been gradually reduced in strength (the battalions on disbandment being frequently formed into local regiments), and at the close of 1901 consisted of 15,053 men, distributed over ten battalions in Upper, and two battalions in Lower Burma. At the end of 1903 the total was 15,062. The force is armed with Martini-Henry rifles. The military police took the principal part in the pacification of the country, and their work now consists, for the most part, in garrisoning posts and performing guard and escort duty. They still form, in fact, a supplementary military force and take no share in the detection or prosecution of offences. The force includes some Kachins and Karens. At one time the latter formed a separate battalion, but a riot that occurred in its ranks in 1899 led to the distribution of the companies forming it among other battalions. Half a company of the recently formed Southern Shan States battalion is composed of Shans.

The railway police force was organized in 1890 and is in charge of a specially selected Superintendent. In 1899 it was reorganized and

its strength somewhat reduced, but since then there have been slight increases. In 1903 the strength of the force was 93 officers and sergeants and 275 men, and the total of true cognizable cases disposed of was 619.

The main statistics of cognizable crime during the five years ending 1901, and in 1903, are given below :—

	Average for five years ending 1901.	1903.
Number of cases reported	57,072	57,051
" " decided in the criminal courts .	36,921	35,862
" " ending in acquittal or discharge	8,855	8,892
" " " conviction . .	28,066	26,970

The Jail department in Burma is under the control of an Inspector-General of Prisons, who belongs to the Indian Medical Service. There are three separate Jail Superintendentships, Rangoon, Insein, and Mandalay. Other jails are in charge of the Civil Surgeon or the senior medical officer at the station where the jail is situated. In 1881 British Burma possessed 2 Central jails, 6 District jails, and 6 lock-ups administered by the Jail department; and the number of prisoners in confinement at the close of that year was 4,461. By 1891, the number of prisons in the Province had risen to 30. Six of these were Central jails, 21 District jails (nearly all at the head-quarters of Districts), and 3 lock-ups. The accommodation in that year was for nearly 13,000 prisoners, and by December 31 the actual total admitted had been raised, by the disturbances that followed on the annexation of the Upper Province, to 11,557. During the two following years the number of prisoners remained at about the same level, but in 1894 there was a sudden rise to 13,625, and at the end of 1896 the highest total yet attained for Burma (14,336) was reached. The year 1897 was marked by Jubilee remissions; the jail population fell to 12,886; and since then the decline has continued almost uninterruptedly. In 1901 the total of jails was 32 (6 Central and 26 District), and the jail population at the end of the year was 11,731, a lower figure than for any year since 1891. The corresponding figure for 1903 was 11,669. During the early portion of the last decade there was congestion in some of the prisons which, in the circumstances of the case, was unavoidable. In 1901, however, there was accommodation for 14,648 prisoners, or for nearly 3,000 more than had actually to be housed at the end of the year, and such overcrowding as occurred was local only and was susceptible of immediate relief. The total of jails in 1903 was the same as in 1901 (32), with accommodation for 16,599 prisoners.

Table XII appended to this article (p. 245) gives the main statistics regarding the jails of the Province. It will be seen that the rate of jail

mortality has fallen during the past twenty years from 44 to 15 per thousand. Admissions to hospital have declined from over 900 per 1,000 of average jail population in 1881, and nearly 900 in 1891, to 547 in 1901 and 474 in 1903. These data speak for themselves of the progress made during the past two decades in the sanitary administration of the jails. The manufacture of furniture and the cultivation of vegetables are two of the most important jail industries of the Province, and, so far as green food is concerned, the prisons are practically self-supporting. Wheat-grinding for the military police is carried on extensively, and as much use as possible is made of convict labour in the manufacture of articles required by Government departments. A branch of the Government Press is located in the Rangoon jail. With the exception of carved wooden furniture, practically no products of jail labour in Burma leave the Province. The profit on jail manufactures is, as will be seen from the table already referred to, considerable. It was lower in 1901 and 1903 than in 1891, owing to a more rigid enforcement of the rule which prohibits the sale to the public of jail manufactures at prices below the ordinary market rate.

A juvenile reformatory at Insein, a few miles out of Rangoon, was opened in December, 1896, taking the place of the reformatory which had till then existed at Paungde, a station in Prome District on the railway line. In April, 1899, it was transferred from the control of the Inspector-General of Prisons to that of the Director of Public Instruction. It had 96 inmates at the end of 1901, and 82 on December 31, 1903.

Education.

On the annexation of Lower Burma the British found an almost unique system of vernacular education ready to their hand throughout their newly acquired possession. The *kyaungs* or monasteries were the schools, and the *pongyis* or monks the teachers, while the taught embraced the whole of the male population of the country, for custom then, as now, demanded that every Burmese Buddhist male, from the highest to the lowest, should pass some portion of his youth in a religious seminary. The tuition given in these indigenous schools was not of the profoundest; but including, as it did, reading, writing, and the rudiments of arithmetic, it was not to be despised, and, apart from its intrinsic worth, it was of value as forming a parent stem on which Western educational methods could be grafted. This process of grafting was first systematically carried out by Sir Arthur Phayre in 1866. An Educational department, with a system of grants-in-aid, had been in existence in Burma for many years previously, but it was then placed on a sound footing. The attention of the newly appointed Director of Public Instruction was directed to supervising and fostering the scheme for spreading vernacular education through the *kyaungs* or Buddhist monasteries in Rangoon and Moulmein; and the principle of adapting the existing indigenous

agency for the diffusion of primary education has since then occupied the foremost place in the educational policy of the Province, Upper Burma having been included in the Educational department's sphere of action in 1889–90. Missionary schools are now plentiful, and lay schools both public and private abound; but the bed-rock of vernacular education in Burma is still monastery teaching, and with it is intimately bound up the educational welfare of the people.

Regarded from a purely departmental point of view, education in Burma falls under two main heads, vernacular and Anglo-vernacular, the latter being carried on wholly under the supervision of the Government Educational authorities. The former is only partially supervised, for a large number of the monastery schools have not yet conformed to the rules of the department and sought registration. Non-registered schools obtain no assistance from Government, but schools which have been registered and have submitted to Government inspection are helped with grants of various kinds.

As at present constituted, the inspecting staff of the Educational department in Burma consists of a Director of Public Instruction, 4 Inspectors of schools, 4 Assistant Inspectors, 44 Deputy-Inspectors, and one Sub-Inspector. The Director and the Inspectors are members of the Indian Educational Service, with a British university training, and are appointed in England by the Secretary of State. The Assistant, Deputy, and Sub-Inspectors are recruited in the country, and are ordinarily Burmans, Karens, or Talaings. The Deputy-Inspectors have, as a rule, the educational charge of a civil District and confine their attention to vernacular education, but neither they nor any of the other members of the inspecting staff undertake any direct instruction. The teaching staff of the Educational department consists of the masters of the Government schools (high, middle, normal, &c.) in the Province; but it is comparatively small, for one of the cardinal principles kept in view has been that Government should 'ordinarily not establish and directly manage schools and colleges of its own, but should inspect, regulate, and assist schools established and managed by private persons or associations.' The greater part of the tuition is thus given by non-Government teachers. To spread elementary education, however, and to assist such persons as are anxious to have their schools registered by the department, or to raise their grade, a staff of itinerant teachers is maintained by Government. Measures have also been taken to facilitate the appointment of pupil-teachers for small and struggling institutions needing special assistance of this kind. These teachers are examined yearly and undergo a practical training at a normal school. In Lower Burma municipalities and committees of 'notified areas' have the general control of educational affairs within their jurisdiction, subject to the rules laid down in the local Education Code; in Upper

Burma the control of municipal and town schools rests directly with the Educational department. In Lower Burma education is one of the objects on which District cess fund money may be spent, but the District funds of Upper Burma cannot be thus applied.

All education, whether vernacular or Anglo-vernacular, falls under one or other of the three heads, collegiate, secondary, or primary. Burma as yet possesses no separate University, and up to 1894 the Rangoon College was the only college. That institution was developed from the Rangoon High School in 1881; and in the following year the Educational Syndicate, a body constituted for the purpose of conducting examinations, and for advising the Local Government regarding certain standards of instruction in Lower Burma, came into being. It had at first no corporate existence; but in 1886 it was formally incorporated under the Registration of Societies Act, and it managed the Rangoon College till 1904 and the High School till 1902. Both these institutions are now under the control of the Educational department. The college is of the first grade. The Baptist College, which was registered as such in 1894, is a second-grade aided college, also at Rangoon. The expenditure on the Rangoon College in 1904 was Rs. 48,150; that on the Baptist College, Rs. 16,200. Both colleges are affiliated to the Calcutta University. Below are given certain particulars regarding the University work of these colleges for the years 1891[1], 1901, and 1904:—

Passes in	Rangoon College.			Baptist College.	
	1891.	1901.	1904.	1901.	1904.
Matriculation	21	30	18	8	11
First or Intermediate in Arts or Science	5	22	16	1	2
Ordinary Bachelors' degrees . .	1	6	7	...	...

A college attendance of four years is required for the attainment of the B.A. degree. Two of these are spent in the F.A. (First Arts) and two in the B.A. section. In 1904 there were 194 students at the two colleges, of whom 5 were females. Hostels for boarders are attached to both institutions. Owing to the absence of caste, the hostel system presents fewer difficulties in Burma than in other Provinces, and it exists to a considerable extent in connexion with the primary and secondary schools also. The hostels (of which there were 115 in 1904) are popular, and proposals for enlarging and extending them are constantly being received by the Educational authorities.

In 1881 Lower Burma possessed 7 high schools and 23 middle schools for boys, with 166 and 950 pupils respectively. In 1891 the Upper and Lower Burma figures combined had risen to 9 high schools

[1] Here, as elsewhere in the Education paragraphs, 1891, 1892, &c., mean the official years 1890–1, 1891–2, &c.

with an aggregate of 2,890 male pupils, and 58 middle schools with 5,135 male pupils. The increase is noteworthy, but it was less than the rise which took place in the succeeding ten years. In 1901 the 15 high schools for boys in Burma had a total of 5,335 male pupils; 3 were managed by Government, 3 by municipal committees, and 9 by private bodies (aided). In the same year there were 281 middle schools for boys with 18,858 male pupils. Twelve of these schools were managed by municipal committees, the rest (269) by private bodies (aided). There were two vernacular high schools in 1901; of the 281 middle schools 225 were vernacular and 56 Anglo-vernacular. In 1904, 21 high schools for boys had 7,432 male pupils; and 325 middle schools for boys (of which 265 were vernacular) had 23,182 male pupils. Of the high schools, 5 were managed by Government, 3 by municipalities, and 13 by private bodies. There are no unaided secondary schools in Burma. Aid is given in the shape of results grants for pupils who have passed examinations, and grants for building, equipment, and maintenance, and for salaries to certificated teachers, &c. Of the male population of the Province of school-going age (taken at 15 per cent. of the total), 3 per cent. were under secondary instruction in 1901.

Primary schools teach the lowest standards, from the first to the fourth inclusive. They may be vernacular or Anglo-vernacular, but there are very few of the latter. Vernacular primary schools are in some cases under missionary control; but the great majority are carried on by non-Christian private individuals, monastic and lay, who draw grants from Government or municipal funds, if they come up to the standard prescribed for registration and conform to the grant-in-aid rules. These are known as public schools. All which do not conform to the rules and have no desire to be inspected by the department are private institutions.

The condition of public male primary education in the Province in the years 1881, 1891, 1901, and 1904 is indicated in the following statement:—

	1881.	1891.	1901.	1904.
Boys' schools	3,210	5,602	3,850	4,529
Pupils	80,977	103,299	99,042	111,462

Of the 4,529 primary schools open in 1904, all but 5 were under private management; of the 5 exceptions, 4 were managed by Government and the remaining one by a municipality. The total of male pupils under primary instruction in public institutions in 1901 was 12 per cent. of the total males of school-going age in the Province.

A survey of primary education statistics (male) during the past

twenty years shows fluctuations so marked as to demand a word of explanation. The high-water mark may be said to have been reached in 1885–6, when Lower Burma alone had 5,102 public boys' schools with 133,408 pupils. Various causes, of which the annexation of Upper Burma was at the time regarded as the most vital, combined to reduce the figures of subsequent years. In 1888–9 the number of schools had fallen to 2,750 and that of pupils to 69,105, and even the inclusion of the Upper Burma data in the following year failed to bring the figures for the whole Province into line with the Lower Burma total for 1885–6. Matters improved after 1888–9; but from 1891–2 onwards there has been a falling off, which has brought the average of the five years ending with 1900–1 down to a level no higher than that of the Lower Burma average of twenty years ago. The fact appears to be that formerly Deputy-Inspectors were apt to place on the departmental registers schools that were really unqualified for registration, so that we may regard the latest figures, the result of successive years of elimination of the unfit, as a truer picture of the state of public primary education than that afforded by the opening years of the two decades under review. It may be laid down as a general proposition that in Burma the extension of primary vernacular education is limited only by the amount of money available for its development: in other words, that, wherever additional funds are judiciously applied and new schools are opened and equipped, there will, in existing circumstances, be an unfailing supply of new scholars to fill the schools and benefit by the money spent.

Whatever may have been the factors that have brought about the reduction in the total of public primary schools, there has been no falling off in the aggregate of unregistered monastic institutions. Growth of population, the transfer of schools from the registered to the unregistered list, and a more thorough system of recording non-departmental data have, in fact, sent up the totals to a very marked extent. The following are the figures for 1891, 1901, and 1904 in respect of private primary schools, the majority of which are *pongyi kyaungs*:—

	1891.	1901.	1904.
Boys' schools . .	5,007	13,036	14,065
Pupils . . .	38,016	144,321	155,588

It will be seen therefore that more than half the education of the country is carried on by the wearers of the yellow robe independently of the Educational department. Teachers in public primary schools have to qualify by the primary grade, and undergo other tests which involve a training of two years for vernacular and three for Anglo-vernacular tuition. The pay of such teachers varies very considerably,

but ranges ordinarily between Rs. 20 and Rs. 100 a month. Rs. 20 is the salary fixed for fifth-grade and Rs. 60 for first-grade certificated assistant-teachers appointed by the department. The pay and position of teachers has improved of late years; but the service is still far from popular, and is often used merely as a stepping-stone to more lucrative employment under Government.

The whole Provincial vernacular system is framed to suit the convenience of children belonging to the agricultural classes. The attendance required during the year is reduced in their case, and their presence is not enforced while work in the fields is necessary.

Female education in Burma has been advancing steadily. The following table shows the totals of public secondary and primary girls' schools, and of the pupils attending them, in the years 1881, 1891, and 1904:—

	Schools.		Pupils.	
	Secondary.	Primary.	In secondary schools.	In primary schools.
1881 . .	6	12	131	6,316
1891 . .	16	108	1,579	14,758
1901 . .	33	286	5,807	28,596
1904 . .	46	396	7,159	35,301

These figures exclude the totals for training schools (6 institutions with 191 female pupils in 1904) and other special schools (13 institutions with 361 pupils). Five girls were in 1904 attending college. Both B.A. and F.A. passes have been secured by female students, and in 1904 thirteen passed the matriculation. The grand total of girls under instruction in 1904 was 47,466, of whom 3,449 were in private elementary schools not inspected by the department. The smallness of the last number, as compared with the corresponding figure for boys, is due to the fact that the indigenous Buddhist system provides no facilities for the education of girls. A virtuous woman will, it is held, receive her reward by reincarnation as a male and her instruction can therefore be postponed to that stage. Nevertheless many Burman women are much more competent than their husbands in matters of business. The total of girls under instruction was in 1881 2·5 per cent., in 1891 3·3 per cent., and in 1901 5·6 per cent. of the total female population of school-going age. The public girls' schools of the Province are all aided schools under private management. The curriculum differs little from that of the boys' schools, but a few optional subjects, such as needlework, hygiene, and domestic economy, are taught only to girls. Except to a small extent in Arakan, the *zanāna* system does not exist among the indigenous females of Burma, and accordingly no special difficulties, such as those met with in India

proper, are experienced in consequence of the seclusion of the sex. The missionary bodies have done much good work in furthering female education.

There were 3 normal schools in 1881, 4 in 1891, and 10 (5 for training masters and 5 for mistresses) in 1901. This last total has since been increased by four. The total of normal-school pupils in 1904 was 395 males and 191 females. The Province possesses no special law school, but a law class is attached to the Rangoon College, which in 1904 had an attendance of 36 students. It was first opened in 1892. An Engineering school at Insein near Rangoon trains youths for the subordinate branches of the Public Works department, and had 32 pupils on its rolls in 1904.

No industrial schools, properly so called, have as yet been opened in Burma. Instruction in certain industries, however, such as weaving, printing, and carpentry, is included in the curricula of a few schools. Medical training is given to female students at the Dufferin Maternity Hospital in Rangoon. A vernacular Forest school has been established at Tharrawaddy, which receives private pupils as well as Forest subordinates for training, and a Veterinary school at Rangoon. There is as yet only one recognized class, also at Rangoon, for imparting commercial instruction. The study of Pāli, the sacred language of Burmese Buddhism, is fostered by a yearly examination known as the *patamabyan*, at which monks and laymen appear and for which certificates of various classes are granted. Mention may be made here of the school at Taunggyi, in the Southern Shan States, for the sons of Shan chieftains.

The education of backward indigenous communities is a matter that has occupied the attention of the religious bodies ever since missionary work was started in Burma. Anglicans, Baptists, and Roman Catholics have been engaged for many years past in educating the Karens, while of late schools have been started for the Kachins and Chins, who, like most of the hill tribes of the Province, have no indigenous educational system of their own.

In 1904 there were 33 educational institutions for Europeans and Eurasians, with an aggregate of 3,298 pupils. The passes gained at the principal examinations by European and Eurasian pupils from all classes of schools during the same year were as follows: B.A. 3, F.A. 2, matriculation 25, middle 432, and primary 1,149. A large proportion of the European scholars enter Government service after leaving school. Others seek occupation on railways or in mercantile offices, while a certain number adopt the legal profession.

In 1891 the Province contained 24 registered Musalmān schools, with 595 pupils, in Lower Burma, and one school, with 36 pupils, in Upper Burma. Of the Lower Burma institutions all but one were in Akyab District, in which alone the Musalmāns form a substantial

proportion of the population. In 1901 there were 45 Musalmān public schools in the Province as a whole, and in 1904 the number was 86. The attendance at these institutions in the last-mentioned year was 2,605. Education in these schools is chiefly confined to the lower primary stage. The number of Muhammadan pupils in all the public educational institutions of Burma, Musalmān and non-Musalmān, in 1891, 1901, and 1904 was as below:—

	1891.	1901.	1904.
Arts colleges	1	5	9
Secondary schools	523	1,263	1,747
Primary schools	1,426	2,227	3,902
Special schools	33	29	34

In public institutions the aggregate of Muhammadan pupils is higher than that of Hindus, but the excess is roughly proportionate to that of the Musalmān over the Hindu population of the Province. The figures given above do not, however, take account of the non-registered Korān schools, which in 1904 numbered 254 with a total of 4,757 scholars. If private institutions are included, the total of Musalmāns under tuition in 1904 (10,475) was more than treble that of Hindus (3,076).

The Government has laid down a minimum rate of fees for all Anglo-vernacular schools in Burma. The rate is Rs. 4 a month for high school, Rs. 3 for middle school, Rs. 2 for upper primary, and R. 1 for lower primary pupils. Collegiate fees range from Rs. 9 to Rs. 5. A certain number of aided schools charge a uniform fee of Rs. 3. The following statement exhibits the main statistics connected with Educational finance for the year 1903–4, in thousands of rupees:—

	Expenditure on institutions maintained or aided by public funds from			
	Provincial revenues.	District and municipal funds.	Fees and subscriptions.*	Total.
Arts and professional colleges	36	...	29	65
Training and special schools	1,12	4	24	1,40
Secondary boys' schools	1,75	1,71	4,34	7,80
Primary boys' schools	1,16	2,47	29	3,92
Girls' schools	35	55	1,07	1,97
Total	4,74	4,77	6,23	15,74

* Exclusive of endowments and other private sources.

The total value of Government scholarships given during the same year amounted to Rs. 27,400.

Successive enumerations have established the fact that the average of education in Burma is high. By this is meant not that the Burman is as a rule well educated, for this is very far from being the case, but that the Province can show a higher proportion of persons (both males and females) able to read and write than any other part of India. In 1901 it was calculated that of every five persons then living in Burma one individual would be able to read and write some language, and would thus be literate for the purposes of the census enumeration. In four Districts of Upper Burma—Upper Chindwin, Minbu, Shwebo, and Magwe—there were in 1901 actually more literate than illiterate males, and for the Province as a whole the average of males able to read and write was 378 per 1,000. The corresponding figure for literate females was only 45 per 1,000, which is still, however, far higher than in any other Province, while in Rangoon more than 26 per cent., and in Hanthawaddy more than 10 per cent., of the female population were able to read and write. In the same year 6 males in every 1,000 and one female in every 1,000 were literate in English. Use has been made of the census figures to calculate the proportion borne by the total of children under tuition to the total of children of school-going age. For the purposes of this calculation the population of school-going age is taken as 15 per cent. of the total. On this basis the population under tuition in Burma was in 1881 16 per cent., in 1891 21 per cent., and in 1901 22 per cent. of the total population of school-going age. Comprising as this does the figures for females as well as for males, the percentage is high for the East.

The total number of newspapers published in Burma in 1903 was 26; of these, 16 were published in English, 8 in Burmese, and one each in Gujarātī and Tamil. There are two important English dailies, the *Rangoon Gazette* and the *Rangoon Times*. The *Friend of Burma* and the *Burma Herald* are Burmese dailies with a somewhat smaller circulation. None of the Burmese journals can be said to be actively political, and none printed in English or Burmese is addressed to any special class of the reading public. The Gujarātī and Tamil newspapers are more or less the mouthpieces of the Bombay and Madras residents of Burma. The American Baptist Mission Press issues a number of weekly and monthly periodicals, which are, however, wholly religious.

The total number of publications registered in Burma in 1902 under the Printing Presses and Books Act was 123. In 1903 the total had risen to 146. The majority of these are, as a rule, in Burmese or Pāli-Burmese, and are for the most part religious treatises. The number of dramatic works is generally large. Educational publications, on the other hand, are relatively few, and, except in the matter of philology, original research is lacking.

Medical.

The Medical department in Burma is controlled by an Inspector-General of Civil Hospitals. Each civil District, except Northern Arakan and Salween, is under the medical charge of a Civil Surgeon, who is stationed at the District head-quarters (Rangoon has three officers of this class); and there are also Civil Surgeons at Taunggyi, Lashio, Falam, and Maymyo. Assistant-Surgeons are stationed at the head-quarters of the Northern Arakan and Salween Districts and elsewhere, and a large staff of Hospital Assistants does duty in the District head-quarters hospitals or in charge of the minor subdivisional and township dispensaries. The main figures regarding the hospitals are given in Table XIV appended to this article (p. 246). The number of hospitals and dispensaries rose from 27 in 1881 to 119 in 1901 and 134 in 1903. Of these, the most important are the hospitals at Rangoon, Akyab, Moulmein, and Mandalay. The Rangoon hospital was opened in 1854, in a wooden building on its existing site. In 1872 the present building was erected at a cost of nearly a lakh, and it has been added to very considerably since then. A new General Hospital is now under construction. In 1868, the first year for which figures are available, the total of patients treated was 9,555. In 1891 the corresponding figure was 52,605, and in 1903 it was 64,596. The number of beds now available is 483, of which 425 are for males. Prior to 1902 the cost of the hospital was met for the most part by the Rangoon municipality; since then it has been maintained from Provincial revenues. The establishment of the Akyab hospital dates from the annexation of Arakan after the first Burmese War. A new hospital was built in 1879, and has been added to from time to time as occasion required. The patients treated in 1891 and 1903 numbered 15,712 and 16,877 respectively. The hospital is supported for the most part from Local funds and accommodates 114 in-patients. The first civil hospital in Moulmein was started soon after 1840. The existing hospital was built, practically upon the site of the old one, in 1877, and since 1881 it has been a municipal institution. Its present accommodation is for 84 male and 16 female in-patients. The total number of patients treated was 13,091 in 1891 and 15,864 in 1903. The date of construction of the existing Mandalay hospital was 1891, though accommodation for patients had been provided in a temporary building from 1888. In 1887–8 the attendance at the hospital was 3,948 patients. This figure had risen in 1903 to 19,753. The hospital is a municipal institution. The table above referred to shows that Local funds contribute the greater part of the money for hospital maintenance in Burma. The expenditure under this head more than doubled during the period 1888–1901. The Province has 4 leper asylums, 2 in Mandalay and one each in Rangoon and Moulmein.

There is a lunatic asylum in Rangoon. It was built in 1872 and opened with a population of 151, which has since risen to over 400. The asylum buildings were largely extended between 1894 and 1898.

Inoculation is carried on extensively in Burma, being preferred to vaccination by the Burmese, especially by the illiterate, under the mistaken belief that, while vaccination requires to be repeated every few years, inoculation protects for a lifetime. Inoculators have been employed as vaccinators, but have invariably been found to give way to popular prejudice and to resort to their old system of inoculation, which they find more paying.

Vaccination is being pushed on throughout Burma, and in recent years has been extended to the Shan States and the Chin Hills. It is compulsory in nearly all the municipalities and cantonments of the Province. The main statistics are given in Table XIV appended to this article (p. 246). There seems reason, however, to question the accuracy of the figures of successful operations, and the extent to which the population is protected against small-pox cannot be accurately estimated.

A scheme for facilitating the sale of quinine in pice packets in rural areas was brought into operation towards the close of 1895. The results were at first not encouraging, but in 1903 the sales reached a total of 3,250 packets, equal to 1,758,000 grains. The quinine is sold at post offices, and by vaccinators, village postmen, and village headmen.

Rules providing for village sanitation are issued under the authority of the Village Act and Regulation by Commissioners of Divisions, and volumes known as the Permanent Sanitary Record and the Village Sanitary Inspection Book are maintained for the more important villages of the Province. The total amount expended from District cess and District funds on rural sanitation in 1903 was Rs. 1,60,000.

Surveys.

Parties of the Survey of India are employed in Burma in connexion with the cadastral, the topographical, and the Forest survey. Of these, the most valuable from an administrative point of view is the cadastral survey, which plays an important part in the assessment of land revenue. The system adopted is that of a connected theodolite exterior survey and a field-to-field interior survey. The country to be surveyed is divided up into polygons, each of which consists of so many *kwins*, areas ordinarily from 1 to $1\frac{1}{2}$ square miles in extent, enclosed as much as possible within natural boundaries, and corresponding in many ways to the *mauzas* of Northern India. The unit of survey is the field, an area of cultivated land ranging ordinarily between an acre and a quarter of an acre, included within well-defined boundaries. The greater part of the cultivated area of Lower Burma and also of Upper Burma has been

cadastrally surveyed. The cadastral record prepared by the Survey of India is kept up to date by the Provincial Land Records department, the alterations and extensions in cultivation, ownership, topography, &c., being annually shown on fresh copies of the maps. The area in which this system of supplementary survey was carried on in 1903-4 was in all nearly 42,000 square miles; and the Land Records staff at that date consisted of a Director of Land Records, an Assistant Director, 27 superintendents of land records, with 7 probationers, 105 inspectors, and 1,058 surveyors. So far the supplementary survey system has been introduced into most of the Upper Burma Districts. Records-of-rights and occupations are prepared by the settlement officer and are kept up to date by the officers of the supplementary survey, changes of ownership being registered in Lower Burma by surveyors and in Upper Burma by village headmen. In unsettled Districts no record-of-rights is maintained. The subordinate Land Records staff is recruited from the Government survey schools. At the close of 1903-4 there were 18 such schools in the Province with 452 pupils. Village headmen, on whom the collection of the revenue devolves, are encouraged to send their sons or other relatives likely to succeed them in office to the survey schools, and in the Upper Burma schools the majority of the scholars are youths of this class. Forest surveys are made with a view to the preparation of the maps that are used as a basis for forest working-plans. They are carried out by the Topographical Survey branch of the Survey of India.

[*British Burma Gazetteer*, 2 vols. (Rangoon, 1879 and 1880).—F. Mason: *Burma, its People and Productions* (1883).—Shway Yoe: *The Burman, his Life and Notions* (1882).—J. Nisbet: *Burma under British Rule—and before* (1901).—*Burma Census Reports*, 1872, 1881, 1891, and 1901.—Sir J. G. Scott: *Gazetteer of Upper Burma and the Shan States* (Rangoon, 1900-1); and *Burma: a Handbook of Practical Information* (1906).—V. C. Scott O'Connor: *The Silken East*, 2 vols. (1904).—S. Kurz: *Preliminary Forest Report of Pegu* (Calcutta, 1875).—*Records, Geological Survey of India*, vols. xxv, xxvi, xxvii, and xxviii.—San Germano: *The Burmese Empire* (1885).—Sir A. Phayre: *History of Burma* (1884).—J. Gray: *The Alaungpra Dynasty* (Rangoon, 1885).]

TABLE I. Temperature in Burma

Station.	Height in feet of Observatory above sea-level.	Average temperature (in degrees Fahrenheit) for twenty-five years ending with 1901 in							
		January.		May.		July.		November.	
		Mean.	Diurnal range.	Mean.	Diurnal range.	Mean.	Diurnal range.	Mean.	Diurnal range.
Mergui *	96	77.8	20.8	81.5	15.0	78.5	11.8	78.7	17.5
Rangoon	41	76.7	24.8	84.6	14.8	80.5	9.4	79.9	5.1
Thayetmyo †	130	69.8	32.3	88.2	20.7	82.6	12.8	77.6	20.6
Mandalay ‡	250	70.2	28.0	88.9	20.3	86.5	15.9	77.2	19.5
Bhamo ‡	381	62.9	28.1	83.2	21.2	81.5	12.7	70.5	22.0
Akyab	20	70.4	22.3	84.6	12.9	81.0	7.4	78.3	13.9
Hill station—Maymyo §	3,508	53.5	37.4	71.6	19.2	70.3	11.9	61.1	24.2

Note.—The diurnal range is the average difference between maximum and minimum temperatures of each day.
* The figures here are for twenty-four years. † The figures here are for twenty-three to twenty-five years.
‡ These figures are for thirteen years only. § These figures are for three to four years only.

TABLE II. Rainfall in Burma

Station.	Average rainfall (in inches) for twenty-five years ending with 1901 in												Total of year
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Mergui	0.93	1.86	3.26	6.32	18.86	31.88	31.77	30.82	27.00	12.78	3.54	0.36	168.58
Rangoon	0.12	0.35	0.19	1.63	11.10	17.85	21.37	19.79	15.62	6.78	2.37	0.09	97.26
Thayetmyo	0.02	0.13	0.03	0.83	4.36	6.84	6.91	7.06	6.00	4.32	1.60	0.14	38.24
Mandalay *	0.05	0.08	0.15	1.14	5.54	5.86	3.02	3.96	5.47	4.71	1.52	0.27	31.77
Bhamo †	0.67	0.42	0.68	1.64	6.28	13.05	18.61	15.99	8.99	3.54	0.99	0.42	71.28
Akyab	0.07	0.15	0.47	1.17	11.15	44.83	52.63	41.86	21.43	10.00	2.97	0.65	187.38
Hill station—Maymyo ‡	0.08	...	0.12	0.5[illegible]	10.57	5.75	2.97	7.26	9.70	6.16	0.78	0.24	44.14

* The figures here are for fifteen to seventeen years. † The figures here are for fifteen to sixteen years. ‡ The figures here are for one to two years only.

TABLE III

Statistics of Agriculture, Burma

(In square miles)

	1881–90 (average).	1891–1900 (average).	1900–1.	1903–4.
Total area	102,342	160,583	158,353	162,530
Total uncultivated area .	94,962	146,949	140,459	142,851
Cultivable but not cultivated	39,898	50,138	39,414	41,417
Uncultivable . . .	55,064	96,811	101,045	101,434
Total cultivated area . .	7,380	13,634	17,894	19,679
Irrigated from canals . .	159	578	858	778
Irrigated from wells and tanks	36	123	279	119
Irrigated from other sources	53	216	164	176
Total irrigated area . .	248	917	1,301	1,073
Unirrigated area . . .	7,132	12,717	16,593	18,607
Total cropped area.				
Rice	6,219	10,369	13,360	14,540
Wheat	14	25	18	53
Other food-grains . .	373	1,608	2,288	2,704
Oilseeds	134	678	1,321	1,558
Sugar-cane	13	20	20	21
Cotton	48	228	241	250
Tobacco	39	92	109	100
Miscellaneous . . .	601	902	1,135	1,004
Total area cropped . .	7,380	13,634	17,894	19,679
Area double cropped . .	61	288	598	551

TABLE IV. Distribution of Population in Burma, 1901

Natural or administrative division.	Area in square miles.	Number of towns.	Number of villages.	Total population. Persons.	Total population. Males.	Total population. Females.	Urban population. Persons.	Urban population. Males.	Urban population. Females.	Persons per square mile in rural areas.
Lower Burma.										
Akyab	5,136	1	2,351	481,666	267,980	213,686	35,680	27,581	8,099	86
Northern Arakan	5,233	..	27	20,682	10,557	10,125	..	..	..	3
Kyaukpyu	4,387	1	1,124	168,827	81,075	87,752	3,145	1,770	1,375	37
Sandoway	3,784	1	646	90,927	45,975	44.952	2,845	1,462	1,383	23
Total, Arakan Division	18,540	3	4,148	762,102	405,587	356,515	41,670	30,813	10,857	38
Rangoon town	19	1	..	234,881	165,545	69,336	234,881	165,545	69,336	..
Hanthawaddy	3,023	..	2,061	484,811	267,002	217,809	..	..	..	160
Tharrawaddy	2,851	3	1,821	395,570	201,033	194,537	21,380	11,315	10,065	131
Pegu	4,276	1	1,174	339,572	183,173	156,399	14,132	8,375	5,757	76
Prome	2,915	3	1,761	305,804	178,462	187,342	49,267	24,552	24,715	109
Total, Pegu Division	13,084	8	6,817	1,820,638	995.215	825,423	319,660	209,787	109,873	115
Bassein	4,127	2	2,617	391,427	203,977	187,450	39,046	24,390	14,656	85
Myaungmya	2,970	2	2,283	303,274	158,977	144,297	9,721	5,503	4,218	98
Thongwa	3,471	2	2,285	484,410	261,406	223,004	19,402	11,332	8,070	134
Henzada	2,870	6	2,349	484,558	241,557	243,001	54,507	27,865	26,642	150
Total, Irrawaddy Division	13,438	12	9,534	1,663,669	865,917	797,752	122,676	69,090	53,586	115
Toungoo	6,172	2	1,682	279,315	143,685	135,630	23,453	12,705	10,748	41
Salween	2,666	..	246	37,837	19,464	18,373	..	..	..	14
Thaton	5,079	2	1,173	343,510	180,208	163,302	20,979	12,049	8,930	63
Amherst	7,062	2	738	300,173	163,930	136,243	62,365	38,824	23,541	33
Tavoy	5,308	1	322	109,979	54,574	55,405	22,371	10,904	11,467	16
Mergui	9,789	1	395	88,744	46,280	42,464	11,987	6,169	5,818	7
Total, Tenasserim Division	36,076	8	4,556	1,159,558	608,141	551,417	141,155	80,651	60,504	28

Thayetmyo	4,750	2	1,275	239,706	118,948	120,758	26,031	13,917	12,114	45
Upper Burma.										
Pakokku	6,210	1	1,432	356,489	167,835	188,654	19,456	9,123	10,333	54
Minbu	3,299	2	1,147	233,377	111,750	121,627	13,737	6,618	7,119	66
Magwe	2,913	3	818	246,708	119,142	127,566	15,419	7,924	7,495	79
Total, Minbu Division	17,172	8	4,672	1,076,280	517,675	558,605	74,643	37,582	37,061	58
Mandalay	2,117	3	943	366,507	183,374	183,133	194,178	98,756	95,422	81
Bhamo	4,146	1	854	79,515	41,530	37,985	10,734	7,129	3,605	16
Myitkyinā	10,640	..	1,228	67,399	36,336	31,063	..	..	..	6
Kathā	6,994	..	1,958	176,223	86,494	89,729	..	..	..	25
Ruby Mines	5,476	..	828	87,694	48,214	39,480	..	..	..	16
Total, Mandalay Division	29,373	4	5,811	777,338	395,948	381,390	204,912	105,885	99,027	19
Shwebo	5,634	1	1,426	286,891	134,045	152,846	9,626	5,390	4,236	49
Sagaing	1,862	1	836	282,658	132,148	150,510	9,643	4,659	4,984	146
Lower Chindwin	3,480	1	1,272	276,383	121,967	154,416	7,869	4,382	3,487	77
Upper Chindwin	19,062	..	1,456	154,551	77,152	77,399	..	..	..	8
Total, Sagaing Division	30,038	3	4,990	1,000,483	465,312	535,171	27,138	14,431	12,707	32
Kyaukse	1,274	1	709	141,253	69,329	71,924	5,420	2,712	2,708	106
Meiktila	2,183	1	1,247	252,305	119,047	133,258	7,203	4,287	2,916	112
Yamethin	4,258	2	1,281	243,197	120,384	122,813	23,068	11,691	11,377	51
Myingyan	3,137	2	1,190	350,052	166,134	189,918	22,393	11,312	11,081	106
Total, Meiktila Division	10,852	6	4,427	992,807	474,894	517,913	58,084	30,002	28,082	86
GRAND TOTAL, PROVINCE PROPER	168,573	52	44,955	9,252,875	4,728,689	4,524,186	989,938	578,241	411,697	49
Dependent States.										
Northern Shan States	14,594	..	3,858	321,090	160,045	161,045	..	..	..	22
Southern Shan States	43,321	..	10,917	816,354	403,583	412,771	..	..	..	18
Chin Hills	8,000	..	401	87,189	43,167	44,022	..	..	..	10
Pakokku Chin Hills	2,250	..	264	13,116	6,549	6,567	..	..	..	5
GRAND TOTAL, BURMA	236,738	52	60,395	10,490,624	5,342,033	5,148,591	989,938	578,241	411,697	40

NOTE.—The figures in this table are those given in the census tables (Imperial) and do not always agree with those given in the District articles, which have been revised in the light of the information contained in the Provincial census tables, &c. The area of the Northern Arakan District given in the Imperial tables (5,233 square miles) included an unadministered tract which was not enumerated. The actual area of the administered portion of the District is about 1,500 square miles. The Pyapon District of the Irrawaddy Division has been formed since 1901, and the name of the Thongwa District in the same Division has been changed to Ma-ubin. Particulars regarding their area, population, &c., will be found in the District articles.

TABLE V

Trade of Burma by Sea with other Provinces of India for the Years 1890–1, 1900–1, and 1903–4

(In thousands of rupees)

Articles.	1890-1.	1900-1.	1903-4.
Imports.			
Coal	11,87	25,11	37,93
Cotton, raw	11	29	16
Cotton, twist and yarn	36,02	34,84	41,81
Cotton manufactures, piece-goods, &c.	33,81	43,14	61,87
Fruits and vegetables	9,03	15,46	15,82
Grain and pulse	11,98	32,34	47,88
Gunny-bags	41,68	70,85	64,49
Oils	19,15	42,87	57,32
Oil and other seeds	8,83	15,26	24,97
Provisions	42,07	55,51	68,38
Silk and silk goods	12,42	14,17	7,58
Spices	38,37	58,11	55,00
Tobacco	34,07	56,16	51,59
All other articles	69,42	77,91	92,51
Total	3,68,83	5,42,02	6,27,31
Treasure	1,02,69	69,84	68,18
GRAND TOTAL	4,71,52	6,11,86	6,95,49
Government treasure	...	3,00,55	1,81,31
Exports.			
Cotton and cotton goods . . .	6,20	17,78	11,39
Dyes and tans	17,65	6,64	5,34
Paddy and rice	49,62	7,34,48	1,33,74
Other grain and pulse	5,48	68,02	11,79
Oils	2,54	49,77	1,97,35
Provisions	19	76	75
Timber	88,42	83,16	76,37
All other articles	20,52	23,77	43,86
Total	1,90,62	9,84,38	4,80,59
Treasure	11,50	19,71	4,36
GRAND TOTAL	2,02,12	10,04,09	4,84,95
Government treasure	...	85,40	23,33

TABLE V (*continued*)

Foreign Maritime Trade of Burma for the Years 1890–1, 1900–1, and 1903–4

(In thousands of rupees)

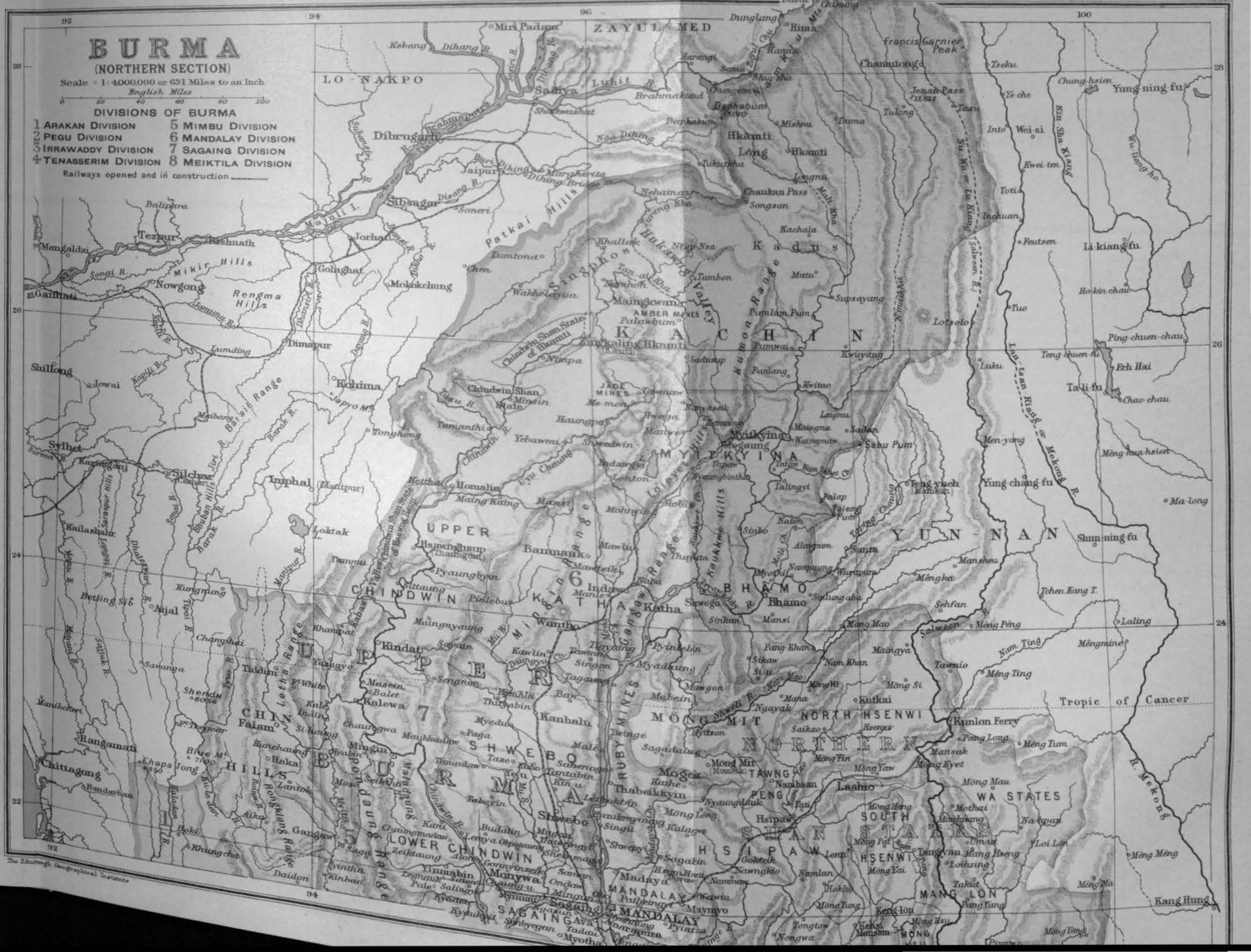
Articles.	1890–1.	1900–1.	1903–4.
Imports.			
Liquor	21,53	28,80	37,43
Provisions	34,34	45,24	55,62
Salt	13,92	10,43	8,69
Sugar	17,04	32,00	33,36
Hardware	14,11	23,54	33,40
Metals	27,72	57,10	1,07,08
Machinery	12,24	20,19	33,92
Silk	24,40	15,02	9,30
Cotton twist and yarn	38,04	43,25	45,22
Cotton goods	1,47,79	1,80,95	1,58,61
Silk goods	59,27	55,24	53,81
Woollen goods	24,64	32,97	32,14
Apparel	17,57	27,45	34,54
All other articles	96,36	1,14,70	1,83,14
Total	5,48,97	6,86,88	8,26,26
Treasure	1,06	12,27	20,93
Grand Total	5,50,03	6,99,15	8,47,19
Exports.			
Paddy and rice	8,43,03	7,92,43	13,13,68
Other grain and pulse	89	3,99	14,73
Dyes and tans	14,28	18,72	19,26
Rice bran	20,01	35,16	41,84
Hides and skins	5,80	15,53	25,08
Oils	1,57	9,35	10,06
Timber	37,36	83,42	88,81
Other articles	37,35	45,03	73,43
Total	9,60,29	10,03,63	15,86,89
Treasure	94	4,54	6,16
Grand Total	9,61,23	10,08,17	15,93,05
Government treasure { Imports	...	...	...
Government treasure { Exports	16	...	..

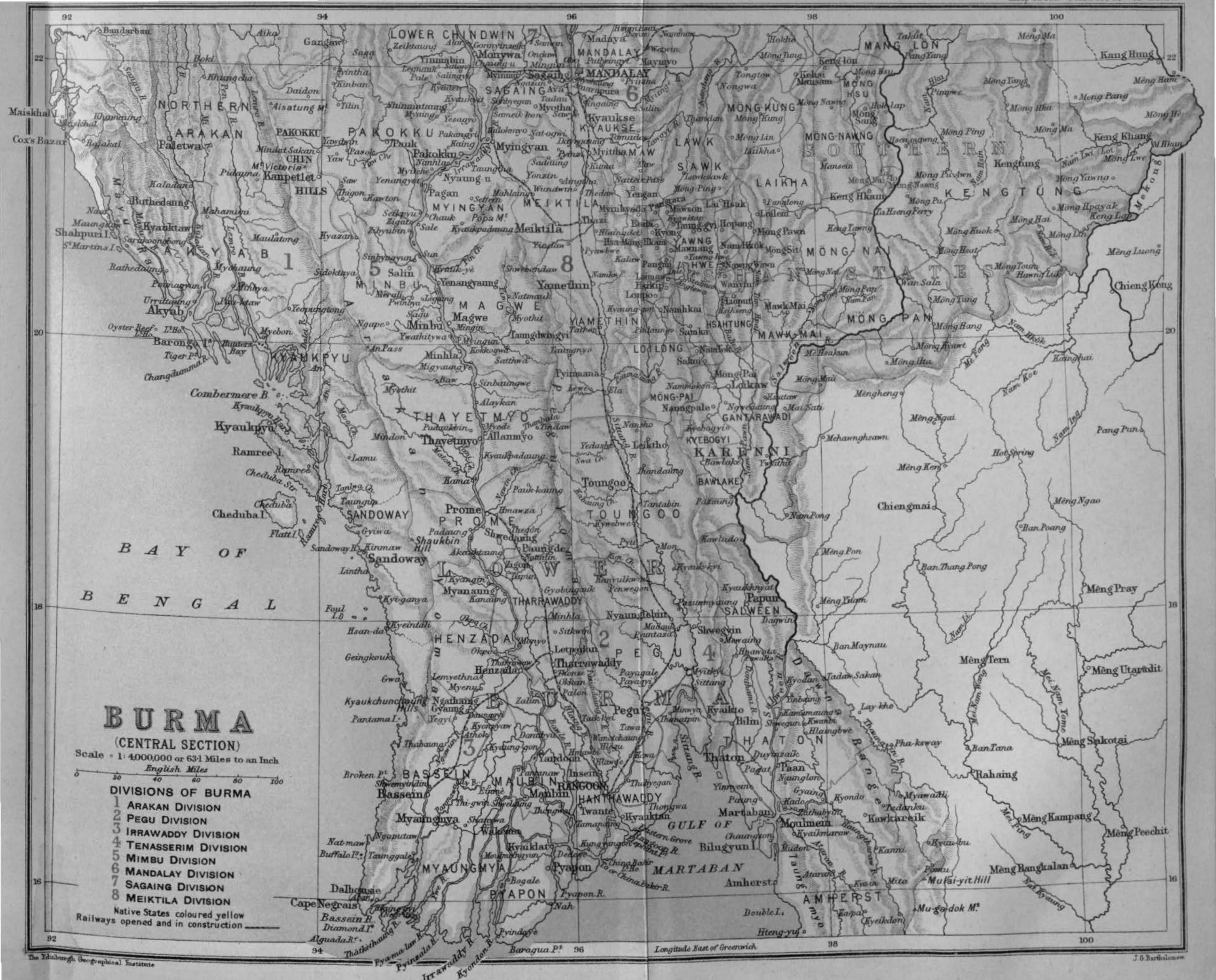
TABLE V (*continued*)

Foreign Land Trade of Burma for the Years 1890–1, 1900–1, and 1903–4

(In thousands of rupees)

Articles.	1890-1.	1900-1.	1903-4.
Imports.			
Animals	6,79	6,11	25,08
Timber	26,50	38,94	42,73
Silk, raw and manufactured	3,91	6,24	10,30
Orpiment	52	2,22	99
Tea, wet and dry	7	78	8
Hides and skins	19	2,68	1,13
All other articles	1,24	4,48	3,45
Total	39,22	61,45	83,76
Treasure	4,73	24,92	24,76
Grand Total	43,95	86,37	1,08,52
Exports.			
Cotton, raw	9,96	7,13	3,16
Cotton, manufactured	4,53	18,56	30,30
Provisions	22	2,22	1,31
Salt	4	1,05	89
Silk and silk goods	2,47	2,50	1,91
Woollen goods	1,41	3,17	82
Spices	24	62	54
All other articles	1,69	9,43	7,14
Total	20,56	44,68	46,07
Treasure	7,52	20,86	31,79
Grand Total	28,08	65,54	77,86


BURMA
(NORTHERN SECTION)
Scale 1:4,000,000 or 63.1 Miles to an Inch
English Miles
0 20 40 60 80 100
DIVISIONS OF BURMA
1 ARAKAN DIVISION
2 PEGU DIVISION
3 IRRAWADDY DIVISION
4 TENASSERIM DIVISION
5 MIMBU DIVISION
6 MANDALAY DIVISION
7 SAGAING DIVISION
8 MEIKTILA DIVISION
Railways opened and in construction
LO NAKPO
ZAYUL MED
KACHIN
MYITKYINA
BHAMO
YUNNAN
UPPER CHINDWIN
UPPER BURMA
KATHA
SHWEBO
LOWER CHINDWIN
SAGAING
MANDALAY
RUBY MINES
MONG MIT
NORTHERN SHAN STATES
NORTH HSENWI
SOUTH HSENWI
HSIPAW
TAWNG PENG
WA STATES
MANG LON
CHIN HILLS
Tropic of Cancer
Sadiya
Dibrugarh
Sibsagar
Jorhat
Tezpur
Nowgong
Gauhati
Shillong
Dimapur
Kohima
Imphal
Silchar
Sylhet
Chittagong
Rangamati
Myitkyina
Bhamo
Katha
Kindat
Kalewa
Falam
Haka
Tiddim
Shwebo
Monywa
Sagaing
Mogok
Lashio
Hsipaw
Maymyo
Teng-yueh
Ta-li-fu
Erh Hai
Li-kiang-fu
Yung-chang-fu
Shun-ning-fu
Kang Hung
Salween R.
Mekong R.
The Edinburgh Geographical Institute


BURMA
(CENTRAL SECTION)
Scale = 1: 4,000,000 or 63·1 Miles to an Inch
English Miles
0 20 40 60 80 100
DIVISIONS OF BURMA
1 ARAKAN DIVISION
2 PEGU DIVISION
3 IRRAWADDY DIVISION
4 TENASSERIM DIVISION
5 MIMBU DIVISION
6 MANDALAY DIVISION
7 SAGAING DIVISION
8 MEIKTILA DIVISION
Native States coloured yellow
Railways opened and in construction
BAY OF BENGAL
GULF OF MARTABAN
LOWER CHINDWIN
MANDALAY
SAGAING
NORTHERN ARAKAN
PAKOKKU
CHIN HILLS
MYINGYAN
MEIKTILA
KYAUKSE
AKYAB
KYAUKPYU
MINBU
MAGWE
YAMETHIN
THAYETMYO
SANDOWAY
PROME
TOUNGOO
LOWER BURMA
THARRAWADDY
HENZADA
PEGU
SALWEEN
THATON
BASSEIN
MAUBIN
HANTHAWADDY
MYAUNGMYA
PYAPON
AMHERST
SOUTHERN SHAN STATES
KENGTUNG
KARENNI
MÖNG NAI
LAIKHA
LOILONG
MAWKMAI
MÖNG PAN
Akyab
Kyaukpyu
Sandoway
Bassein
Rangoon
Pegu
Moulmein
Toungoo
Prome
Thayetmyo
Minbu
Magwe
Meiktila
Yamethin
Mandalay
Sagaing
Monywa
Pakokku
Myingyan
Kengtung
Chiengmai
Thaton
Amherst
Martaban
Henzada
Tharrawaddy
Maubin
Myaungmya
Pyapon
Cape Negrais
Cheduba I.
Ramree I.
Longitude East of Greenwich
92 94 96 98 100
The Edinburgh Geographical Institute
J. G. Bartholomew

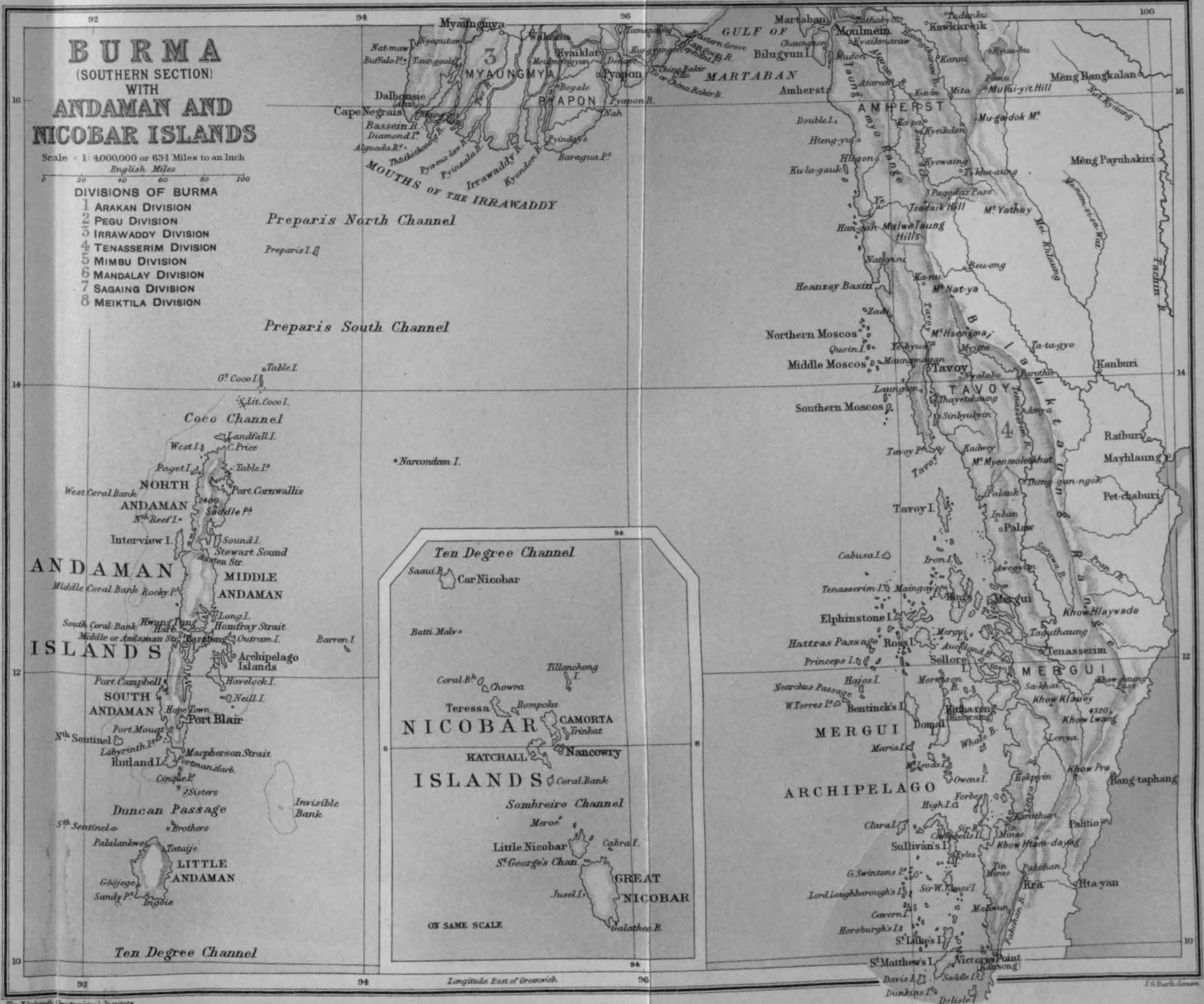

BURMA
(SOUTHERN SECTION)
WITH
ANDAMAN AND
NICOBAR ISLANDS
Scale = 1: 4,000,000 or 63·1 Miles to an Inch
English Miles
0 20 40 60 80 100
DIVISIONS OF BURMA
1 ARAKAN DIVISION
2 PEGU DIVISION
3 IRRAWADDY DIVISION
4 TENASSERIM DIVISION
5 MIMBU DIVISION
6 MANDALAY DIVISION
7 SAGAING DIVISION
8 MEIKTILA DIVISION
GULF OF MARTABAN
MYAUNGMYA
PYAPON
AMHERST
TAVOY
MERGUI
MOUTHS OF THE IRRAWADDY
Preparis North Channel
Preparis South Channel
Coco Channel
NORTH ANDAMAN
MIDDLE ANDAMAN
SOUTH ANDAMAN
ANDAMAN ISLANDS
LITTLE ANDAMAN
Duncan Passage
Ten Degree Channel
NICOBAR ISLANDS
Car Nicobar
CAMORTA
KATCHALL
Nancowry
Sombreiro Channel
Little Nicobar
GREAT NICOBAR
ON SAME SCALE
MERGUI ARCHIPELAGO
Moulmein
Martaban
Amherst
Tavoy
Mergui
Port Blair
Cape Negrais
Longitude East of Greenwich
J.G.Bartholomew.

TABLE VI

Statistics of Criminal Justice, Burma

	Average for ten years ending		1901.	1903.	Percentage of convictions during 1903.
	1890.*	1900.			
Number of persons tried:					
(*a*) For offences against person and property	24,719	37,184	38,372	42,801	47·4
(*b*) For other offences against the Indian Penal Code . .	9,434	12,475	14,354	13,902	52·4
(*c*) For offences against Special and Local laws	24,400	51,754	66,492	70,319	72·6
Total	58,553	101,413	119,218	127,022	61·9

* For the first nine years Lower Burma figures only; Upper Burma figures not available till 1890.

TABLE VII

Statistics of Civil Justice, Burma

	Average for ten years ending		1901.	1903.
	1890.*	1900.		
Suits for money or movable property	32,072	46,670	52,940	63,092
Title and other suits . .	2,798	4,823	5,203	5,564
Rent suits	...	...	...	...
Total	34,870	51,493	58,143	68,656

* For the first nine years Lower Burma figures only; Upper Burma figures not available till 1890.

TABLE VIII

Principal Sources of Provincial Revenues in Burma

(In thousands of rupees)

	Average for ten years ending March 31, 1890.		Average for ten years ending March 31, 1900.		Year ending March 31, 1901.		Year ending March 31, 1904.	
	Total amount raised (Imperial, Provincial, and Local).	Amount credited to Provincial revenues.	Total amount raised (Imperial, Provincial, and Local).	Amount credited to Provincial revenues.	Total amount raised (Imperial, Provincial, and Local).	Amount credited to Provincial revenues.	Total amount raised (Imperial, Provincial, and Local).	Amount credited to Provincial revenues.
Land revenue *	1,30,50	50,66	2,46,19	1,24,51	3,19,95	2,44,62	3,52,30	2,37,17
Salt	3,63	45	15,34	1,56	13,41	6,70	15,48	7,74
Stamps	9,41	5,27	16,14	10,00	20,83	15,62	29,43	22,08
Excise (Liquor)	10,49	4,89	23,76	6,77	28,30	14,15	33,93	11,31
Excise (Opium)	15,91	8,92	18,92	6,32	25,00	12,50	40,71	13,57
Customs	56,40	12,41	76,84	45	92,20	1,04	1,31,66	1,06
Assessed taxes (from 1886)	1,02	24	8,02	3,71	11,18	5,59	11,88	5,94
Forests	26,21	9,94	60,84	23,25	80,54	40,27	82,69	41,34
State railways	25,49	23,56	73,78	40,49	1,13,34	...	1,41,07	...
Other sources	26,92	10,10	46,07	17,16	56,11	24,31	72,41	30,57
Total	3,05,98	1,26,44	5,85,90	2,34,22	7,60,86	3,64,80	9,11,56	3,70,78

* Including capitation tax and land rate in lieu, *thathameda*, fishery revenue, &c.

TABLE IX

Provincial Expenditure under Principal Heads in Burma

(In thousands of rupees)

	Average for ten years ending March 31, 1890.	Average for ten years ending March 31, 1900.	Year ending March 31, 1901.	Year ending March 31, 1904.
Opening balance .	15,58	38,24	1,15,45	1,05,30
Charges in respect of collection (principally land revenue and forests) . .	18,77	39,72	70,10	80,46
Salaries and expenses of civil departments:—				
(*a*) General administration	4,44	7,81	10,54	11,36
(*b*) Law and justice .	17,41	26,02	37,53	41,04
(*c*) Police	22,51	46,63	91,49	95,97
(*d*) Education . .	3,05	4,50	7,65	9,02
(*e*) Medical . . .	2,01	3,02	5,95	9,29
(*f*) Other heads . .	4,20	4,92	7,95	10,96
Pensions and miscellaneous civil charges . . .	4,49	8,99	12,00	17,04
Other charges and adjustments	25,05	37,21	2,10	4,12
Irrigation	5,08	8,86	16,93	15,63
Civil public works . .	19,87	37,23	87,40	96,21
Total expenditure	1,26,88	2,24,91	3,49,64	3,91,10
Closing balance .	15,14	47,55	1,30,61	84,98

TABLE X

Income and Expenditure of Municipalities in Burma

(In thousands of rupees)

	Average for ten years 1890–1900.	1900–1.	1903–4.
Income.			
Tax on houses and lands	8,33	10,96	12,30
Other taxes	6,35	9,99	13,00
Loans	2,25	11,58	26,57
Markets and slaughter-houses	10,34	12,62	13,81
Other sources	16,23	18,59	20,21
Total income	43,50	63,74	85,89
Expenditure.			
Administration and collection of taxes	3,54	3,88	6,74
Public safety	3,03	3,49	3,09
Water-supply and drainage	2,72	3,76	29,24
Conservancy	5,44	7,16	8,39
Hospitals and dispensaries	3,53	5,58	4,57
Markets and slaughter-houses	2,55	2,56	7,42
Public works	9,30	11,27	8,70
Education	1,53	1,52	2,41
Extraordinary and debt	7,10	9,82	14,07
Other heads	4,47	4,56	6,74
Total expenditure	43,21	53,60	91,37

TABLE XI

Strength and Cost of Civil Police, Burma

	1881.		1891.		1901.		1903.	
	Number.	Total cost.	Number.	Total cost.	Number.	Total cost.	Number.	Total cost.
Supervising Staff.		Rs.		Rs.		Rs.		Rs.
District and Assistant Superintendents .	21		97		96		93	
Inspectors . .	67		141		144		153	
Subordinate Staff.								
Head constables	107		317		332		341	
Sergeants, constables, &c., Civil Police .	5,841		14,393		11,907		12,262	
Sergeants, constables, &c., Municipal Police	817	14,45,718	545	35,36,621	92	31,74,387	22	34,53,931
Sergeants, constables, &c., Cantonment Police . . .	..		109		22		22	
Sergeants, constables, &c., Railway Police	..		167		286		357	
Total	6,853	14,45,718	15,769	35,36,621	12,879	31,74,387	13,250	34,53,931

TABLE XII. Jail Statistics, Burma

	1881.	1891.	1901.	1903.
Number of Central jails .	2	6	6	6
Number of District jails .	6	21	26	26
Number of subsidiary jails (lock-ups) . . .	6	3	*nil*	*nil*
Average daily jail population :—				
(*a*) Male.				
In Central jails . .	2,860	8,310	7,320	6,833
In other jails . . .	1,805	3,041	4,475	4,241
(*b*) Female.				
In Central jails . .	29	67	69	58
In other jails . . .	32	35	51	55
Total	4,726	11,453	11,915	11,187
Rate of jail mortality per 1,000	44·44	30·12	15·19	17·24
	Rs.	Rs.	Rs.	Rs.
Expenditure on jail maintenance	3,35,334	7,45,309	7,95,874	6,84,233
Cost per prisoner . .	70–15–3	65–1–2	66–12–9	61–2–7
Profits on jail manufactures .	1,68,131	3,22,733	3,14,436	3,15,484
Earnings per prisoner . .	45–11–7	37–1–1	31–14–3	34–9–6

TABLE XIII

Colleges, Schools, and Scholars, Burma

Class of institutions.	1890–1.			1900–1.			1903–4.		
	Number of institutions.	Scholars.		Number of institutions.	Scholars.		Number of institutions.	Scholars.	
		Males.	Females.		Males.	Females.		Males.	Females.
Public.									
Arts colleges	1	24	1	2	136	4	2	189	5
Secondary schools { High	12	2,890	384	22	5,335	978	28	7,432	1,267
Secondary schools { Middle	71	5,135	1,195	307	18,858	4,829	364	23,182	5,892
Primary schools	5,710	103,299	14,758	4,091	99,042	28,596	4,925	111,462	35,301
Training schools	4	51	30	10	224	80	14	395	191
Other special schools	21	594	29	49	1,018	294	224	1,421	361
Private.									
Advanced	..	..	..	..	..	..	..	..	..
Elementary	5,044	38,016	2,043	13,118	144,321	3,361	14,159	155,588	4,449
Total	10,863	150,009	18,440	17,599	268,934	38,142	19,716	299,669	47,466

TABLE XIV

Medical Statistics, Burma

	1881.	1891.	1901.	1903.
Hospitals.				
Number of civil hospitals and dispensaries	27	80	119	134
Average daily number of :—				
(*a*) In-patients	340	998	1,588	2,063
(*b*) Out-patients	721	2,582	4,553	4,841
Income from :—	Rs.	Rs.	Rs.	Rs.
(*a*) Government payments	70,281	73,822	1,39,239	336,544
(*b*) Local and municipal payments	61,079	2,53,728	5,36,784	394,352
(*c*) Fees, endowments, and other sources	28,762	18,928	77,144	65,064
Expenditure on :—				
(*a*) Establishment	65,442	1,41,489	291,260	3,29,346
(*b*) Medicines, diet, buildings, &c.	65,285	2,04,989	184,901	4,64,699
Vaccination.	1880–1.	1890–1.	1900–1.	1903–4.
Population among whom vaccination was carried on	3,128,285	7,542,332	8,146,855	10,477,508
Number of successful operations	35,199	141,795	366,079	329,762
Ratio per 1,000 of population	11	19	45	31
	Rs.	Rs.	Rs.	Rs.
Total expenditure on vaccination	16,709	40,643	78,854	94,331
Cost per successful case	0–7–8	0–4–7	0–3–5	0–4–7

Butāna.—Town in the Gohāna *tahsīl* of Rohtak District, Punjab, situated in 29° 12′ N. and 76° 42′ E., 19 miles north of Rohtak on a branch of the Western Jumna Canal, to which it gives its name. Population (1901), 7,509. It is administered as a 'notified area.'

Buthidaung Subdivision.—Subdivision of Akyab District, Lower Burma, consisting of the BUTHIDAUNG and MAUNGDAW townships. The head-quarters are at Buthidaung (population, 983), on the Mayu river.

Buthidaung Township.—Township in Akyab District, Lower Burma, constituted in 1906 from a portion of the RATHEDAUNG township, with an area of 763 square miles and a population (1901) of 59,766.

Buxa.—Cantonment in the Alīpur subdivision of Jalpaigurī District, Eastern Bengal and Assam, situated in 26° 46′ N. and 89° 35′ E., on a small gravel plateau 2,000 feet above sea-level, in a valley in the lower range of the Bhutān hills. Population (1901), 581. Buxa commands one of the principal passes leading into Bhutān and lies on the trade route from that State, whence ivory, wax, wool, musk, rhinoceros' horns, cotton cloth, *endi* silk cloth, blankets, honey, and brick-tea are imported and purchased by local merchants, who either pay in cash or give in exchange rice, tobacco, English cloth, betel-nuts, &c. Large quantities of indigenous wool, both from Bhutān and through Bhutān from Tibet and Central Asia, enter India through this channel for export to Europe. The cantonment, which was established during the Bhutān War in 1865, consists of a rough fort to which three pickets are attached on spurs at a higher elevation. A detachment of native infantry is stationed here. Water is obtained from two perennial streams, one of which issues from the base of the plateau. The average annual rainfall of 209 inches is the highest recorded in Bengal.

Buxar Subdivision.—North-western subdivision of Shāhābād District, Bengal, lying between 25° 16′ and 25° 43′ N. and 83° 46′ and 84° 22′ E., with an area of 669 square miles. The subdivision consists of a level plain, entirely under cultivation and extensively irrigated by canals; a strip of land to the north along the Ganges is liable to inundation from the overflow of that river. The population was 416,704 in 1901, compared with 438,739 in 1891, the density being 623 persons per square mile. It contains two towns, BUXAR (population, 13,945), its head-quarters, and DUMRAON (17,236); and 937 villages. Buxar is famous as the scene of the defeat by Sir Hector Munro of Shujā-ud-Daula and Mīr Kāsim in 1764, while at CHAUSĀ, near by, Humāyūn was defeated by Sher Shāh in 1539.

Buxar Town (*Baksar*).—Head-quarters of the subdivision of the same name in Shāhābād District, Bengal, situated in 25° 34′ N. and 83° 58′ E., on the south bank of the Ganges. Population (1901),

13,945. Buxar is a station on the East Indian Railway, 411 miles from Calcutta, and is a considerable centre of trade. It is famous as the scene of the defeat in 1764 by Sir Hector Munro of Mīr Kāsim, in the battle which finally won the Lower Provinces of Bengal for the British. It is a place of great sanctity, and is said to have been originally called Vedagarbha, 'the womb of the Vedas,' as many of the inspired writers of the Vedic hymns lived here. Buxar was constituted a municipality in 1869. The income during the decade ending 1901-2 averaged Rs. 8,400, and the expenditure Rs. 7,700. In 1903-4 the income was Rs. 9,500, mainly derived from a tax on persons (or property tax); and the expenditure was Rs. 12,000. Buxar contains the usual public buildings, and also a Central jail with accommodation for 1,391 prisoners. The chief jail industry is the manufacture of tents, of which 2,705 were supplied to Government departments in 1903; cloth-weaving and the manufacture of prison clothing and uniforms for the police and *chaukīdārs*, as well as for the Opium and Jail departments, are also extensively carried on. A subsidiary jail has accommodation for 61 prisoners.

Byādgi.—Town in the Rānībennur *tāluka* of Dhārwār District, Bombay, situated in 14° 41′ N. and 75° 30′ E., about 10 miles north-west of Rānībennur town, on the Southern Mahratta Railway. Population (1901), 6,659. The municipality, established in 1879, had an average income during the decade ending 1901 of Rs. 10,000. In 1903-4 the income was Rs. 11,600. A weekly market, one of the largest in the District, is held on Saturdays, when rice, molasses, groceries, and chillies are sold. The Rāmeshwar temple has two inscriptions, one dated 1092 and the other 1620. The town contains three schools, of which one is for girls.

Byāns.—A portion of Almorā District, United Provinces, near the Tibetan border. *See* BIĀNS.

Cāchār (*Kāchār*).—District in Eastern Bengal and Assam, which derives its name from the Kāchāri tribe, whose Rājā married a Tippera princess and received as her dowry the upper portion of the Surmā Valley. It lies between 24° 12′ and 25° 50′ N. and 92° 26′ and 93° 29′ E., and covers an area of 3,769 square miles. On the north it is bounded by the Kapili and Doiāng rivers, which separate it from Nowgong District; on the east by the Nāgā Hills and the State of Manipur; on the south by the Lushai Hills; and on the west by the District of Sylhet and the Jaintiā Hills. The District falls into two natural divisions, the plains and the hills. The latter (area 1,706 square miles) is a section of the range which divides the Surmā Valley from that of the Brahmaputra. The former is the upper portion of the valley of the Barāk or Surmā, and consists of a level plain dotted with isolated hillocks and broken up

Physical aspects.

by ranges of low hills, which project from the mountains surrounding it on three sides. The area of the plains portion is 2,063 square miles. The BARAIL range, which connects the north Manipur hills and the Khāsi range, forms a continuous wall along the north of the Barāk valley, varying from 2,500 to 6,000 feet in height. South of the Barāk the District is bounded on the east by the BHUBANS, which vary from 700 to 3,000 feet in height, and on the west by the SIDDHESWAR Hills. The plain is further broken up by two long ranges running north and south, called the Rengtipāhār and the Tilain. All of these hills are formed in ridges and peaks, with precipitous sides covered with tree forest. The general appearance of the District is extremely picturesque. On three sides it is shut in by range upon range of blue hills, whose forest-clad sides are seamed with white landslips and gleaming waterfalls. The villages are buried in groves of feathery bamboos and the graceful areca palm, and the country on every side looks fresh and green. Here and there, swamps and marshes lend variety to the scene, and the low hills with which the plain is dotted are covered, as a rule, with neat rows of tea bushes and crowned at the top with the planter's bungalow. The Barāk winds through the centre of the plain, its surface dotted with the sails of native craft, and in places hills come down almost to the water's edge.

The chief river of Cāchār is the Barāk or SURMĀ, which enters the District from Manipur at the extreme south-east corner, and, flowing north, forms the boundary between that State and British territory till it turns westward a little to the south-east of Lakhipur. Its bed is from 100 to 200 yards in width, and in places is as much as 70 feet deep. Its principal tributaries in Cāchār District from east to west are: on the south bank, the SONAI, the Ghāgrā, and the DHALESWARI, with its new channel, the Kātākhāl; on the north bank, the JIRI, which also divides Cāchār and Manipur, the Chiri, the Madhurā, and the JĀTINGĀ. The Doiāng, which falls into the Kapili, a tributary of the Brahmaputra, is the largest river north of the Barail. The most important sheet of water in the District is the Chātlā *haor*, or fen, a low-lying tract between the Rengtipāhār and Tilain hill ranges, which during the greater part of the year is drained by the Ghāgrā river. When the monsoon breaks, the rainfall on the surrounding hills, assisted by the floods of the Barāk, turns this marsh into a navigable lake 12 miles in length by 2 in breadth. The floods, however, deposit large quantities of silt, and year by year the level is being raised and the area liable to inundation diminished. Other marshes, though of less importance, are the Bakri, the Bowalia, the Kholang, the Thapani, and the Pumā.

The Cāchār plains form an alluvial tract which is gradually being raised by the action of the rivers, which overflow their banks and deposit a layer of silt. The constituents of the soil are clay, sand, and

vegetable matter. The hills surrounding the valley are for the most part composed of Upper Tertiary sandstones.

The vegetation of the District presents the usual characteristics of a sub-tropical region. The hills are covered with dense evergreen forest and bamboo jungle, and in the plains there are the remains of a savannah forest, of which the principal constituents are *simul* (*Bombax malabaricum*) and *jarul* (*Lagerstroemia Flos Reginae*). High grass grows on the lower land and floating weeds cover the numerous swamps.

Wild animals are no longer common in the valley; but elephants, bison, buffalo, tigers, leopards, bear, and various kinds of deer are still found in the wilder parts and in the hills.

The climate of the valley is characterized by excessive humidity, and, being shut in by ranges of hills on almost every side, at certain seasons of the year it becomes decidedly oppressive. The hottest months are June to September, with an average mean temperature of about 83 degrees; the coldest month is January, with a mean of 65 degrees. During the rainy season the air is charged with moisture, the annual rainfall in the plains ranging from 100 to 165 inches, but north of the Barail towards the Nowgong border it sinks to 55. Cāchār suffers little either from cyclones or floods. In 1869 there was a severe earthquake, which seriously damaged many buildings in Silchar, and cut up the roads and wrecked the bridges throughout the District. Another severe shock was felt in 1882. The great earthquake of 1897 did some damage to masonry buildings, but the effects of the shock were inconsiderable in comparison with the widespread havoc caused in other parts of the Province.

History.

The seat of the Kāchāri rulers was originally fixed in the Assam Valley, and at the beginning of the thirteenth century they occupied the western portion of Sibsāgar and a large part of Nowgong District. Their capital was situated on the banks of the Dhansiri at DIMĀPUR; and the ruins still to be seen show that the town must once have been the seat of a king, far in advance, both in power and civilization, of the simple tribesmen of the present day. In 1536 Dimāpur was sacked by the Ahom king, its ruler Detsung killed, and the people compelled to remove their capital to Maibang in the North Cāchār hills. Even here they were not safe, and in 1706 Rudra Singh, the most powerful of the Ahom princes, dispatched an army into the hills, which sacked Maibang and compelled the Rājā to take refuge in the plains of Cāchār. He was treacherously seized by the Jaintiā king, but was rescued by the Ahoms and reinstated on the throne. From this time forward the Kāchāri princes seem to have settled in the plains of Cāchār, their court being usually located at Khāspur, but the Kapili valley in Nowgong District also remained Kāchāri territory till it finally passed into the possession of the British.

The first occasion on which the British entered the District was in 1762, when a Mr. Verelst marched from Chittagong to Khāspur to the assistance of the Manipur Rājā, but was prevented from going farther by the difficulties of the country. The reigning family were converted to Hinduism in 1790, and a few years later the last prince, Gobind Chand, was driven from his throne by Marjit Singh of Manipur. This man had established himself on the throne of Manipur by the aid of the Burmans, but when he endeavoured to assert his independence they drove him from the State into the Surmā Valley. The Burmans then threatened to annex Cāchār, but this the British Government, which was in possession of Sylhet, was unable to permit. They espoused the cause of the Kāchāri Rājā, expelled the Burmans, and handed back the District to Gobind Chand. On his death without heirs in 1830, it lapsed to the British Government under the terms of a treaty concluded in 1826.

A large portion of the North Cāchār hills had, however, been seized seventeen years before by a man called Kacha Din, who had originally been one of the Rājā's table servants. He was enticed down into the plains and killed; but his son Tula Rām succeeded in holding his own against the various attacks made upon him, and in 1829 Gobind Chand was induced by Mr. Scott, the Agent to the Governor-General on the north-east frontier of Bengal, to recognize his independence and assign him a separate fief. This territory was subsequently resumed by the British Government in 1854, in consequence of the misconduct and incapacity of Tula Rām and his descendants.

In 1857 a party of Sepoy mutineers made their way from Chittagong through Tippera and Sylhet into Cāchār. They were routed and dispersed near Lakhipur, and the fugitives who escaped into the jungle were hunted down and killed by Kūkis. The southern frontier of the District was for long exposed to the attacks of the Lushais, who raided the valley in 1849, 1869, 1871, and 1892. In 1871 they attacked the garden of Alexandrapur, killed a planter and many of the coolies, and carried off the planter's little daughter; in 1892 they raided Barunchāra and killed forty-two coolies. Trouble was also experienced in the north, and in 1880 a raid was made by the Khonoma Nāgās on the Bālādhan garden, where the manager and some of his coolies were killed. Shortly afterwards a Kāchāri fanatic, named Sambhudan, established himself at Maibang and gave out that he possessed miraculous powers, and that he had been sent to restore the Kāchāri kingdom. He evaded the Deputy-Commissioner, Major Boyd, who had proceeded to arrest him, and attacked and burnt the subdivisional head-quarters at Gunjong, killing three persons. He then returned to Maibang, where his followers were dispersed by the police, but in the *mêlée* Major Boyd received a wound, which for want of proper treatment brought on

mortification and eventually caused his death. Sambhudan was subsequently surrounded and shot while endeavouring to escape. In 1893 some excitement was aroused by the murder of the European manager of the Bālādhan garden, and in 1898 by the death of Mr. Wilde, an engineer engaged on the construction of the railway, who was cut down by two Pathān contractors.

The District contains no archaeological remains of any importance, but there are a few rock-carvings at Maibang.

Population.

Cāchār contains one town, SILCHAR (population, 9,256), the District head-quarters, and 1,332 villages. The population at the last four enumerations was: (1872) 235,027, (1881) 313,858, (1891) 386,483, and (1901) 455,593. The steady increase is largely due to the importation of garden coolies and to immigration from the neighbouring District of Sylhet, and in 1901 more than a quarter of the total population were natives of other Provinces. The District is divided into three subdivisions: SILCHAR and HAILĀKĀNDI, with head-quarters at the towns of those names, and NORTH CĀCHĀR, with head-quarters at Hāflang. The following table gives particulars of area, towns and villages, and population according to the Census of 1901:—

Subdivision.	Area in square miles.	Number of Towns.	Number of Villages.	Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
Silchar	1,649	1	809	301,884	183	+ 12.7	15,210
Hailākāndi	414	...	269	112,897	272	+ 13.0	5,352
North Cāchār	1,706	...	254	40,812	24	+ 115.4	2,139
District total	3,769	1	1,332	455,593	121	+ 17.8	22,701

The majority of the population live in the centre of the plains and in the Hailākāndi valley. The North Cāchār hills, which are covered with forest and bamboo jungle, have an indigenous population of only twelve persons per square mile. Hindus number 303,000, or 66 per cent. of the population; Muhammadans, 133,000, or 29 per cent.; while most of the rest profess various forms of Animism. Rather more than half the population speak Bengali, 21 per cent. Hindī and Hindustāni, 10 per cent. Manipurī, and 4 per cent. Dimasa or hill Kāchārī.

The Hindu population is chiefly composed of low castes, who have migrated from Sylhet or have come up to work on tea gardens. Those most strongly represented are the Dom-Patnis (41,000), Namasūdras or Chandāls (13,500), Baurīs (13,500), Chamārs (11,900), and Bhuiyās (9,900). There are also 28,700 Manipurīs who profess the Hindu religion. Among aboriginal tribes, the Kāchāris number 12,900, the

Kūkis 9,300, and the Nāgās 6,600. Only 317 members of European race were enumerated in the District in 1901. The lower castes have, as a rule, abandoned their traditional occupations and taken to agriculture, which is the means of livelihood of 85 per cent. of the people.

About the middle of the last century a branch of the Welsh Presbyterian Mission was started at Silchar. Twenty years later the work was abandoned, and not resumed till 1887. In 1903 there were four members of this mission residing in the town, but the total number of native Christians in the District was only 683.

Agriculture.

The soil of the plains consists of clay and sand in varying proportions, and its fertility depends upon the suitability of the mixture of these two ingredients, and, still more largely, upon the water-supply. The banks of the rivers are higher than the surrounding country, and the level gradually falls away from them and rises again as it approaches the hills. In the centre of these shallow troughs the ground is sometimes too low for cultivation, producing nothing but reeds and grass jungle; but as the rivers, when they overflow, deposit silt, the general tendency is for the level of the District to be raised. In the North Cāchār hills migratory or *jhūm* cultivation is the rule. The jungle growing on the hill-side is cut down and burned, and the seeds of hill rice and other crops are sown among the ashes. After the second or third year the clearing is abandoned, as weeds then become troublesome, and further cropping would be liable to destroy the roots of *ikra* (*Saccharum arundinaceum*) and bamboo, on the growth of which the soil largely depends for its refertilization. Famine is unknown.

The following table shows the distribution of the area under its principal heads in 1903-4 in that portion of the plains which has been cadastrally surveyed:—

Subdivision.	Area in square miles shown in revenue accounts.			Forest area in square miles.
	Settled.	Unsettled.	Cultivated.	
Silchar	697	952	322	772*
Hailākāndi	259	155	126	
North Cāchār	Statistics not available.			35
District total	956	1,107	448	807

* A portion of this forest area lies within the Lushai Hills.

The staple food-crop is rice, which in 1903-4 covered 326 square miles, or 66 per cent. of the cropped area. There are two principal varieties: summer rice, or *aus*, which is sown on high land and reaped about the end of June; and winter rice, which is harvested about December. Winter rice consists, again, of the transplanted variety

known as *sail*, and *āman* or long-stemmed rice sown broadcast on the lower levels. The greater part of the total rice area is under *sail*. Pulse, sugar-cane, mustard, and linseed are also grown, but in comparison with rice and tea other crops are of comparatively small importance.

Tea comes next in importance to rice as regards the area under cultivation (93 square miles), but the value of the manufactured product exceeds that of the whole of the rice crop of the District. The plant was discovered growing wild in Cāchār in 1855, and the first grant of land for a tea garden was made in the following year. Reckless speculation in the promotion of tea companies led to severe depression, which reached its crisis about 1868, when the industry was placed upon a firmer basis. The plateaux at the foot of the Barail range were found to be well adapted for the cultivation of the plant. They rise from 20 to 200 feet above the level of the plain; and though the sides are often steep, the top is generally flat, and has a layer of excellent soil from 5 to 8 feet deep. South of the Barāk, gardens were opened out on the numerous round-topped hills known as *tīlas*; but though at first the soil was little inferior to that of the plateaux, it suffered severely from erosion during the rains. In 1875 the experiment was tried of planting bushes on well-drained marsh land, and it was found that under these conditions the plant gave a large yield, though the tea was of inferior quality. There were, in 1904, 164 tea gardens with an out-turn of over 31,000,000 lb. of manufactured tea, which gave employment to 140 Europeans and 63,500 natives, the latter of whom had been for the most part recruited from other parts of India. The principal tea companies are the Tārāpur, with its centre at Dewān, 18 miles east of Silchar; the Scottpur, centre at Pollarbund, 11 miles east of Silchar; and the Bengal Tea Company in Hailākāndi, with its centre at Ainākhāl.

Since the District came under British rule, it has witnessed an enormous extension of cultivation, and the area under ordinary crops at the last settlement is believed to have been more than ten times that in 1830. Little or no attempt has, however, been made to improve the condition of agriculture or to introduce new staples. The cultivators are prosperous and contented with the existing order of things, and the heavy rainfall renders artificial irrigation unnecessary.

The breed of cattle is poor, and buffaloes, which are of a sturdier stock, are largely used as plough animals. Sheep are imported from other parts of India, as they do not thrive in the damp climate of Cāchār.

Forests.

The 'reserved' forests of Cāchār covered in 1903-4 an area of 807 square miles. With the exception of the Langting Mupā Reserve (area 80 square miles), they are all situated near the southern and eastern borders of the District. These forests have never been thoroughly examined; it is doubtful whether the whole of the area reserved includes valuable timber, and as the popu-

lation begins to press upon the soil, it is probable that the process of disforestation, which has already been begun, will be extended. The most valuable trees are *jarul* or *ajhar* (*Lagerstroemia Flos Reginae*), *nahor* (*Mesua ferrea*), *cham* (*Artocarpus Chaplasha*), *rata* (*Dysoxylon binectariferum*), *sundi*, *gomari* (*Gmelina arborea*), and *gundroi* (*Cinnamomum glanduliferum*); but the bulk of the trade is in *tula* (*Sterculia alata*) and other soft woods which are used for tea boxes. In addition to the Reserves, there is a large area in the North Cāchār hills from which timber can be removed free of charge by Government tenants for their own use, or extracted for sale on payment of royalty. The out-turn of these 'unclassed' state forests has of late exceeded that from the Reserves. Rubber is obtained from *Ficus elastica*, but in recent years only a small amount has been collected. The timber merchants are usually Muhammadans, who employ Kūkis and Nāgās to fell the trees. The logs are dragged by elephants to the Barāk or its tributaries, and pay duty at Sonai, Silchar, Siyāltek, or Mātijuri.

No mines or minerals of any value are known to exist in Cāchār. Discoveries of coal have frequently been reported, but on examination the deposits have invariably turned out to be anthracite or lignite, not worth working. Petroleum has also been discovered near Badarpur and Māsimpur, but not utilized. The local demand for salt was formerly met from salt-wells, but a cheaper and better supply is now obtained through Calcutta.

Apart from tea, there are few manufactures in Cāchār, but two saw-mills give employment to 153 hands. The Manipurīs weave cotton cloths and mosquito curtains, and manufacture brass vessels. *Daos* and axes are forged by blacksmiths from Sylhet, and a certain amount of rough pottery is made, but not enough to satisfy the local demand. The women of the cultivating classes seldom weave even the cloths required for home consumption, and European piece-goods are, in consequence, in great demand.

Trade and communications.

Cāchār exports very little except tea, which in 1904 was valued at about 94 lakhs, and forest produce, such as timber and bamboos, for which there is a considerable demand in Sylhet. The principal articles of import are rice, which is required for the large cooly population, flour, betel-nuts, salt, sugar, *ghī*, cotton piece-goods, kerosene oil, coal, and iron and steel. In 1903–4 nearly half the trade of the District was carried by rail. The bulk of the trade is with Calcutta. Manipur exports to Cāchār timber, rubber, other forest produce, and Indian piece-goods, and till recently supplied tea-seed. It receives in return European piece-goods and cotton twist, dried fish, and betel-nuts. SILCHAR, the head-quarters of the District, is the chief business centre. Other markets of some importance are those at Lakhipur, Sonaimukh

Siyāltek, and Barkhalā; but the numerous tea gardens tend to increase trade centres, as on each large estate there is a local market, to which the villagers from the neighbourhood bring their surplus products. The natives of Cāchār have little aptitude for commerce, and the principal merchants and shopkeepers are natives of Rājputāna, Sylhet, and Bengal.

Prior to the construction of the Assam-Bengal Railway, communication with the outside world was difficult, as in the dry season the Barāk is navigable only by vessels drawing less than 3 feet of water, and the journey to Calcutta from Silchar took nearly five days. The completion of the railway from Badarpur to Silchar in 1898 reduced the time to thirty-three hours. Badarpur, which is on the Sylhet boundary, is the junction, from which the line turns north, and after crossing the Barāk by a large bridge winds through the North Cāchār hills into the Assam Valley.

In 1903-4 there were outside the town of Silchar one mile of metalled and 100 miles of unmetalled road, maintained by the Public Works department, and 6 miles of metalled and 346 miles of unmetalled road kept up by the local boards, besides 224 miles of bridle-path. The principal lines of communication are the Sylhet-Manipur road, which passes through the District from Badarpur to Jirighāt; the Dhayarband road from Silchar to Aijal in the Lushai Hills; the Natwanpur road, which runs along the north of the District to the Sylhet boundary; and the road from Salchāpra, 10 miles west of Silchar, up the valley of the Dhaleswari through Hailākāndi to Kūkicharā. During the rains these roads are incapable of carrying heavy traffic, and tea is usually conveyed down the various rivers with which the District is intersected, and shipped by steamer to Calcutta. The extreme rapidity with which the rivers rise after rain renders the construction of permanent bridges over the larger streams a matter of some difficulty and of great expense. Ferries are in consequence largely used, and there are more than 100 within the District. In the cold season, when the rivers fall, they are often spanned by temporary bamboo bridges.

The steamer service of the District is provided by the India General Steam Navigation Company and the Rivers Steam Navigation Company. Shallow-draught steamers ply on the Barāk in the cold season. During the rainy season there is a regular service of large steamers between Silchar and Calcutta; and feeder-steamers go up the Barāk to Lakhipur, up the Madhurā to Chandighāt tea estate, up the Ghāgrā to the Hattia rocks, and up the Kātākhāl to Kūkicharā.

Administration.

For administrative purposes the District is divided into three subdivisions: Silchar, Hailākāndi, and North Cāchār. Silchar is in the charge of the Deputy-Commissioner, who usually has three Subordinate Magistrates and a Sub-Deputy-Collector as his immediate assistants. A member of the Assam

Commission is usually posted in the Hailākāndi subdivision, and is assisted by a Sub-Deputy-Collector, who exercises magisterial powers. The North Cāchār hills are in charge of a European police officer. The superior staff of the District includes a Forest officer.

The Deputy-Commissioner is invested with the special powers contained in sections 30 and 34 of the Criminal Procedure Code, and is authorized to impose sentences of seven years' rigorous imprisonment. The Judge of Sylhet discharges the functions of a District and Sessions Judge in the plains of Cāchār, the Deputy-Commissioner acts as Sub-Judge, and one or more of the assistant magistrates exercise the powers of Munsifs. The High Court at Calcutta is the chief appellate authority; but in the North Cāchār hills its jurisdiction extends only to Europeans charged with criminal offences, and the Deputy-Commissioner exercises the powers of a District and Sessions Judge, appeals lying to the Chief Commissioner. The system of administration in this subdivision is specially adapted to the needs of a primitive people, and the village headmen are allowed to dispose of most civil disputes and all petty criminal cases.

In the time of the Kāchāri Rājās settlement was made, not with the individual, but with a corporate body. The smallest unit recognized by the State was the *khel*, a collection of men often bound together by no ties of race, caste, or religion, who held a piece of land in common. These *khels* were grouped in larger bodies, which were styled the *raj*. Each individual was jointly and severally responsible for the revenue assessed on the *khel*, and similarly each *khel* was responsible for the payments of the *raj*. The earliest rates mentioned are a he-goat, a pair of fowls, a duck, and two coco-nuts from each holding, irrespective of its size. Subsequently, the rate was fixed at about 2½ annas an acre, and in the time of Kārtik Chand raised to 10 annas. Gobind Chand, the last Rājā, is said to have sometimes obtained twice this sum. In addition to these money payments, the villagers were obliged to supply labour for the Rājā's works, and trade was hampered by high customs duties, market fees, and monopolies.

The first regular settlement of Cāchār, after it came under British administration, was made in 1838–9, for a term of five years, the initial revenue being Rs. 25,000. In 1843–4 a resettlement was made for fifteen years, which was followed by the settlement of 1859, which expired in 1879. The initial revenue at these two settlements was Rs. 43,000 and Rs. 91,000. The rates in 1859 varied from 12 annas to 5 annas per acre. On the expiry of this settlement, a fresh settlement was made for fifteen years. The rates varied from Rs. 1–11 to 12 annas per acre of homestead or cultivated land, excluding land held for tea. Waste was assessed at 3 annas per acre, and the initial revenue was Rs. 2,22,000. The current settlement was made in 1900 for a period of

fifteen years. The method of classification adopted is more discriminating than that employed on previous occasions, and distinctions are drawn between good and bad land in the same village. The rates on cultivation vary from Rs. 2–7 to 12 annas per acre. Waste land is assessed at from 6 to 3 annas and tea at a uniform rate of Rs. 2–1 per acre. It was believed on general grounds that the land could pay double the previous rates of revenue without difficulty, but it was determined to limit the enhancement to 50 per cent., and the actual enhancement amounted to only 47 per cent. above the previous revenue demand. The fields were divided into different classes and the revenue adjusted in proportion to their value. In all villages in which the total increase amounted to 33 per cent. or upwards, it will be reached by progressive instalments spread over from twelve to eight years. The initial revenue was Rs. 4,01,000. The system of joint leases, which was well suited to the time when the greater part of the District was covered with jungle, was found to be only a source of inconvenience when the land was cleared and cultivated. At the last settlement these joint estates were broken up, and separate leases issued to each individual for the land to which he was entitled. The average assessment per acre of homestead or garden land is Rs. 2–1, of rice land Rs. 1–11, and of 'dry-crop' land Rs. 1–3. The total revenue and land revenue of the District, in thousands of rupees, is shown in the table below:—

	1880–1.	1890–1.	1900–1.	1903–4.
Land revenue . .	1,99	3,36	4,00	4.79
Total revenue . .	5,02*	7,84	10,67	11,72

* Exclusive of forest receipts.

A special feature of the Cāchār revenue administration has been the grant of land on favourable terms, not only for the growth of tea, but also for the cultivation of the ordinary staples of the Province. Under the former rules leases were issued for twenty to thirty years, with a revenue-free period and low but progressive rates of revenue, which did not, as a rule, exceed 12 annas per acre. The existing rules, which are modelled on those in force in other parts of Assam, do not offer any concessions to the villager who wishes to bring waste land under ordinary cultivation, but a revenue-free period and low rates have been allowed to settlers in the areas disforested in the south of the District.

The local affairs of the Silchar and Hailākāndi subdivisions are managed by boards, who exercise the functions usually assigned to them in ASSAM. The presence of a strong European element on the boards adds much to their efficiency, and the Deputy-Commissioner or the Subdivisional Officer acts as chairman and executive agent. The total expenditure in 1903–4 was about Rs. 1,17,000, the greater part of which

was laid out on public works and education. The chief sources of income are local rates, tolls on ferries, and a substantial grant from Provincial revenues. SILCHAR is the only municipal town.

For the prevention and detection of crime, Cāchār is divided into seven investigating centres. The police force in 1904 consisted of 33 officers and 145 men, with 663 *chaukīdārs* or village watchmen. A detachment of the Lakhimpur military police battalion is stationed at Silchar. The District jail at Silchar has accommodation for 84 prisoners.

Education has made more progress in the Cāchār plains than in other parts of the Province. The number of pupils under instruction in 1880–1, 1890–1, 1900–1, and 1903–4 was 3,025, 5,157, 7,900, and 8,090 respectively. That the development of education has been satisfactory is also evident from the fact that the number of pupils at school in 1903–4 was more than three times that of the number twenty-nine years before. At the Census of 1901, 5 per cent. of the population in the plains (9·1 males and 0·4 females) were returned as literate. Only a small proportion of the natives of the North Cāchār hills know how to read and write, and the percentage of literacy in the plains is reduced by the large number of ignorant coolies brought up to the tea gardens. There were 245 primary, 6 secondary, and 2 special schools in the District in 1903–4. The number of female scholars was 298. The enormous majority of the boys under instruction and all the girls are in the primary stage. Of the male population of school-going age 19 per cent. and of the female population of the same age less than one per cent. were under primary instruction. The total expenditure on education was Rs. 63,000, of which Rs. 13,000 was derived from fees. About 43 per cent. of the direct expenditure was devoted to primary schools.

Cāchār contains 3 hospitals and 4 dispensaries, with accommodation for 45 in-patients. In 1904 the number of cases treated was 58,000, of whom 500 were in-patients, and 1,300 operations were performed. The expenditure was Rs. 14,000, the greater part of which was met from Local funds.

Vaccination is compulsory only in Silchar municipality. A staff of vaccinators is employed for work in the District; but in this respect Cāchār is very backward, only 19 per 1,000 having been protected in 1903–4, as compared with 44 per 1,000 for the Province as a whole.

[Sir W. W. Hunter, *A Statistical Account of Assam*, vol. ii (1879); S. C. Banarji, *Settlement Report* (1901); B. C. Allen, *District Gazetteer of Cāchār* (1906).]

Cāchār, North.—A subdivision of Cāchār District, Assam, lying between 24° 58′ and 25° 50′ N. and 92° 32′ and 93° 29′ E., with an area of 1,706 square miles. The subdivision is a section of the range which divides the Surmā Valley from that of the Brahmaputra. It was through these hills that the Kāchāri kings moved from Dimāpur, their capital in

the Dhansiri valley, to the plains of Cāchār, and for many years their capital was at MAIBANG, in North Cāchār, on the northern side of the Barail range. Early in the nineteenth century Tula Rām Senāpati, a *chaprāsi* in the employ of the Kāchāri Rājā, succeeded in establishing himself here; and till 1854 he and his sons were recognized by the British Government as feudatory chiefs of the desolate tract of jungle lying between the Mahur river on the south and the Jamunā river in Nowgong District on the north. The whole of the subdivision consists of mountainous country, the hills taking the form of serrated ridges, whose sides in their natural condition are clothed with dense evergreen forest. Shifting cultivation is practised, according to which the land, after being twice cropped, is allowed to lie fallow for seven or eight years, when it becomes covered with a dense growth of reeds and bamboo jungle. The population is extremely sparse, and excluding the persons enumerated by the railway authorities, there were in 1901 only 12 persons per square mile. In 1891 the population was 18,941, and in 1901 it had risen to 40,812; but almost the whole of this increase was due to the presence of a large number of persons engaged on the construction of the railway, who have since left the District. The Assam-Bengal Railway runs through the subdivision, connecting the Brahmaputra Valley with the sea at Chittagong. Its construction was a work of great difficulty and expense, owing to the fact that the hills are largely composed of shale, while the country is covered with jungle, destitute of supplies, and very unhealthy for people working under such conditions as the railway employés. The subdivision is administered by a police officer exercising magisterial powers with head-quarters at HĀFLANG, and contains 254 villages. House tax is assessed in lieu of land revenue. The assessment under this head in 1903–4 amounted to Rs. 6,600. The rainfall is much lighter than in the Cāchār plains, the high wall of the Barail acting as a barrier to the monsoon clouds. At Hāflang the average fall is only 77 inches, and at Maibang farther north 55 inches.

Calcutta (*Kalikātā*).—Capital of the Indian Empire and the official residence of the Viceroy and Governor-General, situated in 22° 34′ N. and 88° 22′ E., on the east or left bank of the Hooghly river, within the Twenty-four Parganas District, Bengal. The city lies about 86 miles from the sea, and is only 18 to 21 feet above mean sea-level. Stretching northward for 6 miles along the river-bank, and bounded on the east by the Circular Canal and the Salt Lakes, it covers at the present day an area of 20,547 acres, of which only 1,792 are rural, and 1,113 acres form the Maidān. Calcutta is so called after a village which formerly occupied the site of the modern Bow Bazar: the name is supposed by some to be connected with the worship of the goddess Kālī.

Description.

The city is bounded on all sides by suburban municipalities, which

have been excluded from Calcutta for purposes of municipal administration. Cossipore-Chitpur on the north, Māniktala on the east, and Garden Reach on the south-west, as well as Howrah on the west bank of the Hooghly river, are industrial suburbs, which form an integral part of the life of the metropolis. If these be included, Calcutta has a population of 1,106,738, which is greater than that of any European city except London, Constantinople, Paris, and Berlin, and of any city in America except New York, Chicago, and Philadelphia. Excluding China, the population of whose cities is uncertain, the only city in Asia with more inhabitants than Calcutta is Tokio; and next to London, it is the most populous city in the British Empire. The present article is, however, confined to the municipal town of Calcutta as defined in Bengal Act III of 1899, Fort William, and the water area, the population of which (1901) is 808,969, 4,612, and 34,215 respectively.

The importance of Calcutta lies in its position as the capital of the empire and as a seaport situated on a navigable river and connected by converging lines of railway, rivers, navigable canals, and roads with the rich valleys of the Ganges and Brahmaputra, whose produce it exports oversea, while it supplies their dense population with the products and manufactures of other countries.

In the centre of the town stands Fort William, surrounded by the noble expanse of park known as the Maidān. North of this are the shops and business houses of the Europeans, whose residential quarter bounds it on the east. To the south and south-east lie the European suburbs of Ballygunge and Alipore, which latter contains the residence of the Lieutenant-Governor of Bengal. Surrounding the European quarter on all sides is the native town. Immediately north of the European commercial quarter is Burra Bazar, the chief centre of native business; the buildings are mainly one-storeyed masonry shops, and it is only here and in the adjoining quarters of Jorābāgān and Bow Bazar that brick buildings are more numerous than tiled huts. Three-fifths of the whole population live in the latter, which have mud or wattle walls and are known as *kachcha* houses. The native town is traversed by three main roads from north to south, and by five or six roads from east to west, but with these exceptions it is extremely ill-arranged. The lanes are narrow, tortuous, and badly lit; the dwellings are overcrowded and insanitary; and the overwhelming proportion of one-storeyed houses gives this portion of the town a peculiarly squalid appearance which belies the proud title of a 'city of palaces' which Calcutta claims.

The city of Calcutta includes the area under the control of the municipal corporation, or Calcutta proper, together with Fort William and the Maidān (1,283 acres), which are under the military authorities, and the water area, or port and canals, with an area of 7,310 acres. Calcutta

proper again is divided into the 'Old Town' and the 'Added Area.' The former, which covers 3,766 acres, is divided into eighteen wards, and is situated between the Lower Circular Road and the Hooghly river. This is the tract within the old Marāthā Ditch, corresponding with the original civil jurisdiction of the Sadar Dīwāni Adālat. The 'Added Area' lies south and east of the Old Town, and is separated from it by the Circular Road; it contains 8,188 acres, distributed over eleven wards. It was excluded from the Suburban municipality and added to Calcutta by Bengal Act II of 1888.

The soil on which Calcutta is built has been formed at a comparatively recent date by the alluvial deposits of the Gangetic delta, and excavations made for tanks and foundations disclose alternate layers of sand and clay. A bore-hole sunk in Fort William in 1840 revealed an ancient land surface at a depth of 382 feet.

The climate is hot and moist. The mean temperature averages 79°, the mean maximum being 102° in May and the mean minimum 48° in January. The average temperature in the hot season is 85°, in the rains 83°, and in the cold season 72°. Humidity averages 78 per cent. of saturation, ranging from 69 per cent. in March to 89 per cent. in August. The annual rainfall averages 60 inches, and the average number of rainy days in the year is 118.

At the beginning and close of the rainy season Calcutta is frequently visited by cyclones, the most disastrous having occurred in 1737, 1842, 1864, and 1867. In 1737 the steeple of St. Anne's Church fell to the ground, many houses were blown down, and all but one of the ships in the river were driven ashore. In the cyclone of 1864 as many as 49 persons were killed and 16 injured; several brick houses were destroyed or damaged, and only 23 of the 195 vessels in the port escaped without injury.

The earthquake of June 12, 1897, was severely felt in Calcutta; the steeple of the Cathedral was destroyed and 1,300 houses were injured.

History.

Calcutta is mentioned in a poem of 1495 as a village on the bank of the Hooghly. When the Portuguese began to frequent the river about 1530, SĀTGAON, not far from Hooghly on the old Saraswatī river, was the great emporium of trade. Owing to the shallowness of the upper reaches of the river, however, ships used to anchor at Garden Reach, and their goods were sent up to Sātgaon in small boats; and a market thus sprang up at Betor, near Sibpur, on the west bank of the Hooghly, which the Portuguese made their head-quarters. In the sixteenth century the Saraswatī began to silt up, and Sātgaon was abandoned. Most of its inhabitants went to the town of Hooghly, but about the middle of the century four families of Bysakhs and one of Seths founded the village of Gobindpur on the site of the modern Fort William. Shortly after this the Portuguese moved

to Hooghly, deserting Betor, and the trade of the latter place was gradually transferred to Sūtānuti ('cotton mart') in the north of modern Calcutta. Job Charnock of the English East India Company came to this place in 1686, after his skirmish with the Mughals at Hooghly, and formulated certain demands on the Nawāb. These were rejected by the latter, who ordered his subordinates to drive the English out of the country. Charnock retaliated by destroying the salt-houses and forts at Tāna or Garden Reach and seizing Hijilī. He was shortly afterwards superseded by Captain Heath, who came out from England with instructions to occupy Chittagong. The attempt on this place failed; but on August 24, 1690, the English returned to Sūtānuti under Charnock, at the invitation of the Nawāb, and laid the foundation of modern Calcutta.

Several reasons led to the selection of this place as the head-quarters of British trade in Bengal. The Hooghly river tapped the rich trade of the Ganges valley, and Calcutta was situated at the highest point at which the river was navigable for sea-going vessels; it was moreover protected against attack by the river on the west and by morasses on the east, and it could be defended by the guns of the shipping.

In 1696 the rebellion of Subha Singh, a Burdwān *zamīndār*, assumed formidable dimensions, and the English applied to the Nawāb for permission to fortify their settlement. This was granted; and a fort was constructed on a site extending from the modern Fairlie Place on the north to Koila Ghāt Street on the south, the river forming the western and what is now Dalhousie Square the eastern boundary. It was completed in 1702. Four years previously the three villages of Calcutta, Sūtānuti, and Gobindpur had been purchased from the governor of Hooghly.

The town grew rapidly; within a short time a wharf, a good hospital, a church, and barracks were erected; and in 1707 the East India Company declared it a separate Presidency accountable only to the Directors in London. The new settlement was perpetually harassed by the Muhammadan governors of Bengal; and in 1717 the Council sent an embassy to Delhi to procure the recognition of their rights in the country and permission to purchase property on the banks of the Hooghly. The emperor granted the permission sought for, but it was to a great extent rendered nugatory by the determined opposition of the Nawāb.

In 1742 the inhabitants commenced to dig an entrenchment round their settlement as a defence against the Marāthās, who were then raiding Bengal. This entrenchment, known as the Marāthā Ditch, followed the course of the modern Circular Road, but it was never completed along the southern boundary. The scare caused by the Marāthā invasion and the growing trade of the Company brought a large influx of new settlers, and in 1752 Holwell calculated the population at

409,000, though this was probably an over-estimate, as the number of houses was still less than 15,000. The original settlement round the Fort was protected by palisades; but the Company's servants lived in the quarter now bounded by Canning Street on the north, Hastings Street on the south, Mission Row on the east, and the river on the west. Within this area there were in 1753, exclusive of the Fort and its warehouses, no less than 230 masonry structures, and the native portion of the town contained about the same number.

The chief event in the early history of Calcutta is its capture in 1756 by Sirāj-ud-daula, Nawāb of Bengal. The native troops deserted and the Europeans were driven into the fort, which was practically indefensible, as its guns were masked by the surrounding buildings. The Governor and many of the officials made their escape to the ships, which thereupon dropped down the river, and the garrison, under the command of Holwell, were driven to surrender. They were forced, to the number of 146, into a small room, measuring only 18 by 14 feet, which is known in history as the Black Hole. Here they were left for the night. It was June 20; the heat was intense, and the two small grated windows were quite insufficient to give air to the closely packed crowd, who endured terrible sufferings. When the morning came and the door was opened, only twenty-three were found alive.

The town was recaptured by Clive and Admiral Watson early in 1757; and after the battle of Plassey, Mīr Jafar gave the English the *zamīndāri* of the Twenty-four Parganas, as well as a free gift of the town and some of the adjacent villages. Heavy compensation was paid to the merchants and the Company's servants and adherents for their losses, and permission was granted to establish a mint. From this date the town has enjoyed uninterrupted prosperity. With part of the compensation money received from the Nawāb, Gobindpur was cleared of its inhabitants and the foundations of the present fort were laid. It was not finished till 1773, and is said to have cost two millions sterling, half a million of which was spent on works to protect the west face from the erosion of the river. The clearing of the jungle round the fort led to the formation of the Maidān. In 1766 the General Hospital was removed to its present site, and at this period the European quarter began to extend southwards along Chowringhee. In 1773, by an Act of Parliament, the Governor and Council of Bengal were invested with control over the other Indian possessions of the Company, and soon afterwards Warren Hastings removed the treasury from Murshidābād to Calcutta.

The history of municipal administration in Calcutta dates from 1727, when the first corporation came into existence. It consisted of a mayor and nine aldermen, and its duties were to collect ground rents and town dues, and to make the necessary repairs to roads and drains.

The amount thus spent was, however, insignificant. An effort was made, about 1757, to organize a municipal fund by levying a house tax, but the scheme came to nothing. The duty of keeping the town in order rested with the Police Commissioner; but its insanitary condition was notorious, and in 1780 the native town was thus described by William Mackintosh (*Travels in Europe, Asia, and Africa*, 2 vols., 1782):—

'It is a truth that, from the western extremity of California to the eastern coast of Japan, there is not a spot where judgement, taste, decency, and convenience are so grossly insulted as in that scattered and confused chaos of houses, huts, sheds, streets, lanes, alleys, windings, gullies, sinks, and tanks, which, jumbled into an undistinguished mass of filth and corruption, equally offensive to human sense and health, compose the capital of the English Company's Government in India. The very small portion of cleanliness which it enjoys is owing to the familiar intercourse of hungry jackals by night, and ravenous vultures, kites, and crows by day. In like manner it is indebted to the smoke raised on public streets, in temporary huts and sheds, for any respite it enjoys from mosquitoes, the natural productions of stagnated and putrid waters.'

By a statute of George III Justices of the Peace were appointed for the town in 1794, and regular assessments were authorized. The Circular Road was metalled, and the conservancy establishment was increased. But many defects remained; and in 1803 Lord Wellesley pointed out the extremely defective construction of the public drains and watercourses, the absence of any regulations in respect of the situation of public markets and slaughter-houses, the irregularity of the buildings and the dangerous condition of the streets, and appointed a Town Improvement Committee of 30 members to carry out the necessary reforms.

Since 1793 it had been the practice to raise money for public improvements by means of lotteries, 10 per cent. of their value being set aside for public works or charitable purposes. As long as the Town Improvement Committee existed, these funds were made over to it; but in 1817 a Lottery Committee was formed, which was employed for twenty years in schemes for the improvement of the town. During this period a great advance was undoubtedly made. The Town Hall was built and the Beliāghāta canal dug, and a large number of streets were opened out, including the Strand Road, Amherst Street, Colootolla and Mirzapur Streets, Free School Street, Kyd Street, Canal Road, Mango Lane, and Bentinck Street, and the long roadway formed by Cornwallis Street, College Street, Wellington Street, and Wellesley Street, with the four adjoining squares. Arrangements for watering the streets were also introduced. In 1820 a systematic plan for road-metalling was adopted at an annual cost of Rs. 25,000. Public opinion

in England having condemned this method of providing funds for municipal purposes, the Lottery Committee came to an end in 1836.

Meanwhile, under the Act of 1794, the Justices had met the expenses of the conservancy and police of the town from a tax on houses and licences for the sale of liquor. In 1819 the house tax realized a little over 2½ lakhs, and in 1836 this had risen to 3 lakhs, while 1½ lakhs was derived from excise. The expenditure on conservancy and police was at this period 5¼ lakhs, the difference being made up by Government.

In 1810 the principle of municipal taxation was extended to the suburbs. In 1840 an Act was passed dividing Calcutta into four divisions, and authorizing the ratepayers, on an application made by two-thirds of them, to undertake their own assessment, collection, and management of the rates up to a limit of 5 per cent. on the assessable property in Calcutta. Nothing came of this Act, and in 1847 the Justices were replaced by a Board of seven paid members, four of whom were to be elected by the ratepayers. They were empowered to purchase and hold property for the improvement of Calcutta and to make surveys, and were entrusted with the maintenance of the streets and drainage. In 1852 their number was reduced to four, two being appointed by Government and two elected; and they were allowed a maximum salary of Rs. 250 a month. The house tax was raised first to 6¼ per cent. and later to 7½ per cent., and a 2 per cent. lighting rate and a tax on carts were authorized; horses and vehicles had already been made taxable by the Act of 1847. The Commissioners were required to set aside 1½ lakhs for the sewage and drainage of the town. In 1856 their number was reduced to three, all of whom were appointed by the Lieutenant-Governor.

In 1863 the municipal government was vested in a body composed of all the Justices of the Peace for the town of Calcutta, together with all the Justices for the Province who happened to be resident in the town. This body elected its own vice-chairman and had a regular health officer, engineer, surveyor, tax-collector, and assessor. A water rate was imposed, and the house tax raised to a maximum of 10 per cent. The Justices' powers of borrowing were extended by several Acts, and during their period of office the drainage and water system of the town were largely developed. The municipal slaughter-houses were opened in 1866, and the New Market in 1874. Footpaths were made along the main thoroughfares, Beadon Square was opened, and in all about 2 crores were spent on the improvement of the town.

In 1876 a new corporation was created, consisting of 72 commissioners with a chairman and vice-chairman; 48 of the commissioners were elected by the ratepayers and 24 appointed by the Local Govern-

ment. This body completed the original drainage scheme, largely increased the supply of filtered and unfiltered water, and effected many other improvements, including the construction of the Harrison Road.

In 1888 the municipal boundaries were extended by the inclusion of a large portion of the suburbs lying south and east of the Circular Road. Seven wards were added, and additions were made to three other wards in the north of the city. The number of municipal commissioners was raised to 75, of whom 50 were elected, 15 appointed by Government, and the remaining 10 nominated by the Chamber of Commerce, the Trades Association, and the Port Commissioners. During the following ten years the filtered water-supply was further extended, at a cost of 18 lakhs, and an underground drainage scheme for the 'Added Area' was started. A *dhobikhānā*, or laundry, and an incinerator were constructed, and a number of insanitary tanks were filled up and replaced by roads and squares. This constitution remained unaltered until 1900, when it was replaced by the system of municipal government now in force, which will be described farther on.

Population.

The population of Calcutta in 1901 was 847,796, the mean density being 41 persons per acre for the whole city, and 68 in Calcutta proper. By far the most crowded ward is Colootolla with 281 persons to the acre, followed by Jorāsānko (202), Jorābāgān (201), and Moocheepāra (199); these wards are in the centre of the native commercial quarter. The lowest density occurs in the suburbs of Alipore and Ballygunge, where much land is still not built over. The greatest increase in population during the last decade has occurred in the wards which were already most populous in 1891. Judged by European standards, the city is seriously overcrowded; more than half the population have less than half a room per head, and 90 per cent. have three-quarters of a room or less. In Burra Bazar no less than 9,531 persons out of 31,574 are crowded four or more into each room. Calcutta in normal years is fairly healthy, but of late the mortality has been greatly swollen by the plague, which in 1903 accounted for 8,222 deaths out of a total of 29,765; the other chief diseases are fever, dysentery, cholera, and respiratory complaints.

Early estimates of the population were made from time to time, but they were partial and untrustworthy, and it was not until 1876 that the first complete Census was taken. The population then enumerated for the whole area of modern Calcutta was 611,784, which grew to 612,307 in 1881, to 682,305 in 1891, and to 847,796 in 1901. On the last two occasions the increases have amounted to 11 and 24 per cent. respectively.

Only a third of the population of Calcutta in 1901 had been born there; half had been born in other parts of Bengal and one-seventh in

other parts of India. The number of persons born in other countries in Asia is 2,973, in Europe 6,701, in Africa 96, in America 175, in Australia 80, and at sea 9. Of the number born in other parts of Bengal, the Twenty-four Parganas supplies nearly one-fifth, and large numbers come from Hooghly, Gayā, Patna, Midnapore, and Cuttack. Of those from other parts of British India, the majority are recruited from the United Provinces, chiefly from Benares, Azamgarh, Ghāzīpur, and Jaunpur. Of other Asiatics, the Chinese, who congregate in China Bazar and the Bow Bazar and Waterloo Street sections, account for 1,709, of whom only 141 are females. Of those born in Europe, 5,750 are British and 951 come from other countries, France (176), Germany (168), and Austria (108) alone having more than 100 representatives.

In the whole population there are only half as many women as men. This is due to the large number of immigrants, among whom there are only 279 females to 1,000 males; the majority of these are temporary settlers who leave their families at home. Another result of the large volume of immigration is that 44 per cent. of the entire population are male adults, which is double the proportion for the whole of Bengal.

No less than 57 different languages are spoken by people living in Calcutta, of which 41 are Asiatic and 16 non-Asiatic. The Bengali-speaking population numbers 435,000 and the Hindī-speaking 319,000. About 31,000 persons speak Oriyā, 29,000 English, and 24,000 Urdū.

By religion 65 per cent. are Hindus, 29·4 per cent. Muhammadans, and 4 per cent. Christians, leaving only about 1 per cent. for all other religions combined; the latter include 2,903 Buddhists, 1,889 Jews, and 1,799 Brahmos. Hindus preponderate in the north of the city, while the chief Musalmān centres are Colootolla and Moocheepāra, and the outlying wards near the docks and canals.

During the decade ending 1901 the growth of the Christian population was 31 per cent. The number of native Christians during the same period increased from 6,671 to 9,872, or by 49 per cent., the Roman Catholic missions with a gain of 88 per cent. being the most successful. The chief Protestant bodies are the Church Missionary Society, the Oxford Mission, the Baptist Mission, the London Mission, the Episcopal Methodist Mission, and the missions of the Established and Free Churches of Scotland. Besides direct evangelization, most of the missions maintain schools and colleges, and thus promote the cause of higher education.

Brāhmans (83,000) are the most numerous caste, and with Kāyasths (67,000), Kaibarttas (37,000), Subarnabaniks and Chamārs (25,000 each), Goālās (23,000), and Tāntis (21,000) account for more than half the Hindu population. Among the Muhammadans 91 per cent. are Shaikhs and 5 per cent. Pathāns, while Saiyids number 8,000. Europeans number 13,571, and Eurasians 14,482.

The main features of the statistics of occupation prepared at the Census of 1901 are reproduced below:—

Main head of occupation.	Workers.		Total number of workers and dependents.	Percentage to whole population.
	Male.	Female.		
Government service	18,737	213	39,590	5
Pasture and agriculture	12,413	1,379	30,754	4
Personal service	81,704	23,649	148,933	18
Preparation and supply of material substances	140,110	12,970	271,713	32
Commerce, trade, and storage	123,698	1,981	203,854	24
Professions	20,082	2,448	54,812	6
Unskilled labour	33,054	16,967	61,523	7
Independent of labour	12,171	6,629	36,617	4
Total	441,969	66,236	847,796	100

Nearly a third of the inhabitants of Calcutta are engaged in manufactures, and nearly a fourth in trade, while personal service accounts for a sixth. Assuming that a man does not begin to work until fifteen years of age, it would appear that no less than 96 per cent. of the males above that age are actual workers; the corresponding proportion in the case of women is only 32. The industrial population is most numerous in Colootolla, Moocheepāra, Jorāsānko, Bhawānīpur, Intally, and Beniāpukur, while Jorāsānko, Burra Bazar, and Jorābāgān wards have the greatest number of persons engaged in commerce. The professional element is strongest in Burtolla in the north, and in Bhawānīpur in the south of the city.

Industries.

Calcutta itself contains but few factories, only three jute-mills and two jute-presses lying within its limits. In the outskirts of the city, however, several smaller industrial concerns are situated, including 63 oil-mills chiefly worked by cattle, 24 flour-mills, 2 rice-mills, 16 iron foundries, and 12 tanneries, which employ less than 13,000 persons all told. The chief home industries are pottery and brasswork; but Calcutta exports little of its own manufactures, and it is to commerce that it mainly owes its position.

Commerce.

Calcutta came into existence as a trading town, because its position enabled merchants to tap the rich traffic of the valley of the Ganges. The luxurious courts of the Mughal rulers had fostered the manufacture at Dacca and Murshidābād of beautiful silks and muslins, which were eagerly bought up in Europe. The saltpetre of Bihār was in great demand in England for the manufacture of gunpowder during the French wars; and rice, sesamum oil, cotton cloths, sugar, clarified butter, lac, pepper, ginger, myrabolams, and *tasar* silk were also in request. Bengal produced all these articles, and Calcutta was the only seaport from which they could be exported.

The demand for Indian muslins gradually died out in Europe, while early in the nineteenth century Lancashire began to export manufactured cotton goods to India, and the introduction of steam-power placed the local weavers at such a disadvantage that piece-goods are now by far the largest article of import into Bengal, while the export of silk and cotton manufactures has practically ceased. The export of jute, on the other hand, has grown enormously since the middle of the nineteenth century, and the production of oilseeds and tea has vastly increased. Bengal coal is in great demand all over India, and salt and mineral oils are largely imported. Through all these vicissitudes of commerce, Calcutta has more than held its own, and the development of railways and of steamer routes along the main waterways has greatly strengthened its position, so that it now focuses the trade of Assam as well as of Eastern Bengal and of the Gangetic valley.

The foreign trade of the port in 1903–4, exclusive of treasure, was valued at 90·54 crores, of which exports amounted to 57·04 crores; and the coasting trade was valued at 11·61 crores, of which 6·66 crores represented exports. The total value of the sea-borne trade, including treasure, was 112·92 crores.

The steady progress of foreign trade in recent years is indicated by the figures below, which show the average annual value of the foreign imports and exports of merchandise (omitting treasure) during successive quinquennial periods:—

Five years ending	Lakhs of rupees.		Five years ending	Lakhs of rupees.	
	Imports.	Exports.		Imports.	Exports.
1875 . .	16,48	23,59	1895 . .	25,95	39,97
1880 . .	17,80	27,78	1900 . .	28,46	45,59
1885 . .	21,50	33,08	Four years ending	Per year.	Per year.
1890 . .	23,44	35,23	1904 . .	32,66	54,28

The chief imports into Calcutta are cotton goods, representing in 1903–4 a value of over 16 crores. Next in importance are treasure, metals, oil, sugar, and machinery; and these are followed by woollen goods, hardware and cutlery, salt, liquors, apparel, drugs, and railway material. About seven-eighths (in value) of the imports came from Europe, three-quarters of the whole being from the United Kingdom.

The chief exports are raw and manufactured jute, tea, opium, hides and skins, oilseeds, grain and pulses, indigo, lac, raw cotton, coal, raw silk, saltpetre, and oils. The most striking feature in the growth of the export trade has been the enormous increase in the shipments of jute and coal. The exports of jute have risen from 8 crores in 1893–4 to nearly 20 crores in 1903–4, and now form about three-eighths of the outward trade; while the shipments of

coal to foreign ports amounted in 1901 to more than half a million tons, as against only 8 tons in 1880. During the same period the imports of foreign coal dwindled from 70,000 to 2,000 tons. More than half of the export trade was with European countries, the United Kingdom taking a third of the whole. Of the continental countries Germany took almost as much as all the others combined. The trade with the United States came next to that of the United Kingdom, and China took rather less than Germany.

The coasting trade has been influenced considerably by extensions of railway communications, and by the development of direct steamship communications between other Indian ports and abroad. The value of imports in 1903–4 was 504 lakhs, of which 462 lakhs was the value of Indian produce and 32 lakhs of foreign merchandise, while 10 lakhs represented treasure. The exports were valued at 726 lakhs, of which 587 lakhs was the value of Indian produce and 79 lakhs that of foreign merchandise, treasure amounting to 60 lakhs. The chief ports with which the coasting trade is carried on are Rangoon, Moulmein, Akyab, Bombay, and Madras. The imports are cotton goods and salt from Bombay, rice and mineral oil from Burma, and sugar, vegetable oil, and oilseeds from Madras; and the exports are grain and pulses, coal, jute and gunnies, spices, tobacco, and tea.

In respect of internal trade, the principal articles which make up the imports to Calcutta are:—from Bengal, raw and manufactured jute, rice coal, linseed, opium, tea, grain and pulses, hides and skins, silk, and indigo; from the United Provinces, opium, oilseeds, grain and pulses, hides and skins, and wrought brass; from Assam, tea, oilseeds, grain and pulses, and lime. In 1901–2 the imports from Bengal were valued at nearly 49 crores. Calcutta being the chief distributing centre of Bengal, the principal articles exported to the interior are the same as those enumerated under the head of foreign imports. The total exports from Calcutta by rail, road, and river were valued in 1903–4 at nearly 38 crores.

The chief associations connected with the trade and commerce of the city are the Bengal Chamber of Commerce (founded in 1834) with its affiliated societies, and the Royal Exchange, the Bengal Bonded Warehouse Association, the Calcutta Trades Association, and the Bengal National Chamber of Commerce.

Three great railways converge on Calcutta. The East Indian Railway connects Calcutta with Bombay, the United Provinces, and the Punjab, and is the outlet for the rich traffic of the Ganges valley. Its terminus is on the west bank of the river at Howrah; but a branch crosses the Hooghly by a bridge at Naihāti, 25 miles up the river, providing access to the docks at Kidderpore over the Eastern Bengal State Railway. The Bengal-Nāgpur Railway runs through Orissa to Madras, and

westwards through the Central Provinces to Bombay; its terminus is also at Howrah, but a wagon ferry plies between Shalimār and the docks. The Eastern Bengal State Railway, the terminus of which is at Sealdah, connects Calcutta with North and East Bengal and Assam, and with Diamond Harbour.

The railways, however, by no means monopolize the traffic. Numerous native craft ply up and down the rivers, along the channels through the Sundarbans which connect Calcutta with Eastern Bengal and the valley of the Brahmaputra, and on the Midnapore and Orissa Coast Canals. There are also several large steamer companies, whose vessels navigate these inland waters and carry an extensive coasting trade to the Orissa ports; the most important of these are the India General, the Calcutta Steam, and the Rivers Steam Navigation Companies.

The port was formerly under direct Government management, but in 1870 a Port Trust was formed, consisting at first of 12, and afterwards of 15 commissioners. The Strand Bank lands were subsequently made over to them at an annual quit-rent of Rs. 37,392. The value of the property taken over by the Trust was estimated at 27·65 lakhs, and with further advances the debt was consolidated into a loan of 60 lakhs. During the last thirty years the commissioners have been adding considerably to the facilities of the port. In 1870 there were only 6 screw-pile jetties, 6 cranes, and 4 sheds for the accommodation of the sea-going trade; whereas now there are 6 unloading berths for sea-going vessels at the jetties, with a frontage of 2,982 feet, and all the loading is done separately at the Kidderpore docks. These docks, which were constructed in 1884–5 at a cost of 285 lakhs, consist of a basin, connected by a double passage with the wet docks, which accommodate twelve vessels, and of two graving docks. The Petroleum Wharf at Budge-Budge was established in 1886, and the Tea Warehouse in 1887. In 1889 the Port Commissioners were made the Conservators of the port. They have their own dockyard and workshop, and they maintain a staff of assistant harbour masters, who take over the pilotage of all vessels from Garden Reach; they license all cargo boats and pay three-fourths of the cost of the river police; they survey and prepare charts of the river from Calcutta to the sea, and are responsible for the lighting of the Hooghly.

The revenue of the Port Trust amounted in 1903–4 to 80 lakhs, and the expenditure to 77 lakhs. The greater part of the income is derived from a toll of 4 annas a ton on all goods shipped or discharged. The capital debt amounts to 501 lakhs, and the book value of the Trust property is returned at 656 lakhs, exclusive of the Strand Bank and Howrah foreshore lands, and an accumulated sinking fund of 42 lakhs.

Even before the foundation of Calcutta, the East India Company

had found it necessary to maintain a special staff to guide ships through the difficult channels of the Hooghly. The Pilot Service is now a Government department, consisting in 1903–4 of 58 officers paid by fees. Some account of the action taken from time to time to keep the channels open, and to facilitate navigation, will be found in the article on the HOOGHLY RIVER.

The trade of the port has grown up since 1727, when the shipping was estimated at only 10,000 tons. The steady growth in recent years will be seen from the following statement:—

	Entered.		Cleared.	
	Number of vessels.	Tons.	Number of vessels.	Tons.
1886–7	1,387	1,553,575	1,419	1,620,877
1891–2	1,446	1,912,681	1,416	1,849,676
1896–7	1,576	2,070,786	1,579	2,060,867
1901–2	1,499	2.869,700	1,514	2,873,730
1903–4	1,563	3,174,946	1,569	3,175,263

The most noticeable features of recent years are the substitution of steam for sailing vessels, the rapid growth of the coasting trade, and the increase in the size of the vessels visiting the port. In 1886–7 the number of sailing vessels was 465, but in 1903–4 it had dropped to 87, and only 29 of these hailed from foreign ports. During the same period the volume of the coasting trade has grown from 1,410,000 tons to 3,317,000 tons; the average tonnage of vessels engaged in the foreign trade has increased from 1,449 to 2,622 tons, and that of coasting vessels from 881 to 1,679 tons.

Up to 1867 only two of the roads in Calcutta were metalled with stone; but in 1905 there were 300·43 miles of road, of which 117 miles were metalled. The roads are maintained by the Corporation, with the exception of those on the Maidān, which are under the charge of the Public Works department. The city is intersected by four main roads running parallel with the river. The most westerly of these, known as the Strand Road, which has been formed by successive reclamations of the foreshore, skirts the river bank from Hastings to Nimtolla, passing by Fort William, the Eden Gardens, and the Jetties. East of this is the Chowringhee Road with its row of lofty houses facing the Maidān, which a traveller of the eighteenth century described as 'an entire village of palaces.' This road, with its northern continuations, Bentinck Street and the Chitpur Road, occupies the site of the old pilgrim road to Kālī Ghāt; and its southern continuation, known as the Russa Road, is still the route for pilgrims visiting that shrine. Between this and the Lower Circular Road is a street running through the heart of the city, the various sections of which are called

Wellesley Street, College Street, and Cornwallis Street; and to the east of it the Lower Circular Road sweeps round the city, one section of it following the course of the old Marāthā Ditch. These four main roads are linked by a number of cross streets, the most important of which are Park Street, passing through the European quarter and so called because it originally bordered the spacious garden of Sir Elijah Impey; Dhurrumtolla Street, passing through a quarter largely inhabited by Eurasians; Lāl Bazar and its continuation Bow Bazar, in the centre of the native town, presenting a mass of densely packed houses and shops; Canning Street and Harrison Road, named after Lord Canning and a former chairman of the Corporation; and, to the north of the town, Sobhā Bazar and Grey Street. From Government House to Kidderpore, 2 miles to the south, stretches the oldest road in the Maidān, known as the 'Old Course' and described in 1768 as being 'out of town in a sort of angle made to take the air in'; to the north this road runs into Old Court-house Street, so called from the old court-house pulled down in 1792. Starting from Kidderpore, Garden Reach and Circular Garden Reach Roads connect the docks and the mills fringing the Hooghly with the city, while to the south Diamond Harbour Road links Calcutta with the harbour after which it is named.

Calcutta is connected with the important town of Howrah, on the west of the river, by several ferries and also by a floating bridge opened in 1874. This structure, supported on pontoons, is 1,530 feet in length between the abutments, and has a roadway for carriages 48 feet in width with footpaths of 7 feet on either side. The bridge is opened three times a week to allow ships to pass to the dockyards above, and while it is open a ferry steamer plies across the river. Bridges over Tolly's Nullah at Kidderpore, Alipore, and Kālī Ghāt connect the south-east portion of the present city with the 'Old Town.' On the north the main roads converge at the Chitpur Bridge, by which the old grand trunk road crosses the Circular canals.

Lines of tramway run from the High Court to Tollygunge, Nimtolla Ghāt, and Sealdah, and from the Esplanade to Chitpur, Shām Bazar, Kidderpore, and Belgāchia. These tramways have been recently electrified. There is a large suburban traffic along all the main lines of railway, and also on two small light railways from Howrah to Amtā and Sheakhala.

Administration.

In the 'Old Town' civil justice is administered by a Judge of the High Court, who sits singly and tries cases above Rs. 2,000 in value and suits concerning land; and by the Small Cause Court with five Judges, who try suits up to Rs. 2,000 in value. In the 'Added Area' a Small Cause Court and two Munsifs' courts sit at Sealdah, and three Munsifs' courts at Alipore; these are subordinate to the District Judge of the Twenty-four Parganas. Both

the District Judge and the Additional Judge of the Twenty-four Parganas have jurisdiction in Calcutta under the Land Acquisition Act. Criminal justice is administered in the 'Old Town' by three stipendiary and a number of honorary Presidency Magistrates. The High Court holds Criminal Sessions, and hears appeals from the Presidency Magistrates. In the 'Added Area' the Sessions Judge and the District Magistrate of the Twenty-four Parganas have criminal jurisdiction. Two stipendiary magistrates sit, one at Alipore and the other at Sealdah, and there are also several honorary magistrates. Throughout Calcutta cases under the Municipal Act are tried by a stipendiary municipal magistrate. The Chief Presidency Magistrate is the presiding officer in the court for the trial of pilots, and also Judge of the Court of Survey for the Port of Calcutta.

The Government revenue receipts under the main heads amounted in 1903–4 to 88·5 lakhs, of which Rs. 18,000 was derived from land revenue, 29·7 lakhs from stamps, 33·3 lakhs from excise and opium, and 25·4 lakhs from income-tax. The total revenue receipts in 1880–1, 1890–1, and 1900–1 were 33·5 lakhs, 61·4 lakhs, and 80·1 lakhs respectively. In 1881 the income-tax had not been imposed.

The Collector of Calcutta, who is assisted by a Deputy-Collector, is Collector of stamp revenue in the 'Old Town,' and is Superintendent of excise revenue throughout Calcutta, and in the municipalities of Cossipore-Chitpur, Māniktala, Garden Reach, Howrah, and Bally. He is also Deputy-Collector of land revenue in the 'Old Town'; and in this respect is subordinate to the Collector of the Twenty-four Parganas, whose ordinary jurisdiction extends over the 'Added Area' in all revenue matters except excise. There is a separate Collector of income-tax in the 'Old Town.'

The stamp revenue of Calcutta has risen from 23 lakhs in 1892–3 to 29·7 lakhs in 1903–4, when 14·2 lakhs was realized from judicial and 15·5 lakhs from non-judicial stamps. During the same period the income-tax receipts rose from 17·22 to 25·4 lakhs, in spite of the exclusion from assessment in 1903 of incomes below Rs. 1,000; and the excise receipts rose from 25 to 33·3 lakhs. The main items under the latter head are imported liquor (1·5 lakhs), country spirit (19·4 lakhs), opium (4·9 lakhs), hemp drugs (4·3 lakhs), rum (2·3 lakhs), and *tāri* (Rs. 79,000).

In the 'Old Town' there is, strictly speaking, no land revenue, as in 1758 the East India Company obtained from the Nawāb a free grant of the area on which Calcutta now stands. The so-called revenue is really ground-rent, which has been permanently fixed and amounts to Rs. 18,163. The 'Added Area' belongs for revenue purposes to the District of the Twenty-four Parganas. The tract east of Tolly's Nullah and the Lower Circular Road, which comprises Bhawānīpur,

Ballygunge, and Intally, is included in the PANCHĀNNAGRĀM Government estate. West of Tolly's Nullah are ordinary permanently settled estates belonging to private owners; a considerable area is, however, included in the Sāhibān Bāgīcha Government estate (*see* TWENTY-FOUR PARGANAS).

The grand total realized by the Customs department in 1903–4 was 388 lakhs, to which salt contributed 197 lakhs; cotton piece-goods, $49\frac{1}{2}$ lakhs; mineral oil, $17\frac{1}{2}$ lakhs; liquor, $22\frac{1}{4}$ lakhs; articles of food and drink, $12\frac{1}{4}$ lakhs; countervailing duties on sugar, $\frac{1}{3}$ lakh; and arms and ammunition, $1\frac{3}{4}$ lakhs. The export duty on rice amounted to $15\frac{1}{4}$ lakhs. Besides this, $26\frac{1}{3}$ lakhs was paid into District treasuries on account of salt imported into Calcutta.

Municipality.

The municipal administration of the city, as regulated by Bengal Act III of 1899, is in the hands of three co-ordinate authorities, the Corporation, the General Committee, and the Chairman. The Corporation consists of the Chairman appointed by Government, and 50 commissioners, of whom 25 are elected at ward elections, and the remainder are appointed as follows: namely, 4 by the Bengal Chamber of Commerce, 4 by the Calcutta Trades Association, 2 by the Port commissioners, and 15 by the Local Government. The General Committee consists of 12 commissioners and the Chairman, who is president. Of the commissioners 4 are elected by the ward commissioners, 4 by the appointed commissioners, and the remaining 4 are appointed by the Local Government. The entire executive power is vested in the Chairman, to be exercised subject to the approval or sanction of the Corporation or General Committee, whenever this is expressly directed in the Act. To the Corporation are reserved the right of fixing the rates of taxation and all those general functions which can be efficiently performed by a large body. The General Committee stands between the deliberative and executive authorities, and deals with those matters which are ill adapted for discussion by the whole Corporation, but yet are too important to be left to the disposal of the Chairman alone.

The Corporation thus constituted commenced work in April, 1900; and its efforts so far have been mainly directed to the introduction of a continuous water-supply for the whole city, the completion of the drainage scheme, the decentralization of control, and the punctual collection of the rates. The city has been divided into four districts, each with its own staff for conservancy, roads, and buildings. A large scheme for opening out the congested areas, with the assistance of Imperial funds, is under consideration.

The drinking-water supply is obtained from the Hooghly river at Paltā, 17 miles north of Calcutta, where it is pumped up into settling tanks and filtered. The pure water is conveyed by gravitation through

two iron mains to a masonry reservoir at the north end of the city. Thence it is pumped into the distributing mains and three other reservoirs in different quarters of the city, and from these it is again pumped into the distributing pipes. The scheme was inaugurated in 1860, and it was then intended to supply 6,000,000 gallons per diem, or 15 gallons per head. In recent years the works have been greatly extended, and the Corporation has now three pumping stations at Paltā and four in the city; there are 1,997 standposts and 5,904 ground hydrants, and the number of filtered water connexions exceeds 26,000. These give to Calcutta and the adjacent towns of Barrackpore, Dum-Dum, Cossipore-Chitpur, Māniktala, and Garden Reach a daily supply of over 7,624,000,000 gallons of filtered water, or 21½ gallons per head. The streets are watered and the drains flushed with unfiltered water pumped up in Calcutta, and for these purposes there are more than 3,500 connexions. The initial cost of the works was 7 lakhs. Subsequent extensions have increased the capital cost to 210 lakhs; the annual cost of maintenance is 16¾ lakhs.

The scheme of underground drainage, by which the city is freed of surplus water and of the filth which water will carry, was inaugurated half a century ago. The drainage is carried eastwards by a series of five parallel conduits which discharge into an intercepting sewer, and thence into a large well at Tengrā in the eastern suburbs. There it is raised by steam pumps into a high-level sewer, which carries it to the Salt Water Lakes, east of the city, there to undergo oxidation. The original project was commenced in 1859, and took sixteen years to complete; but meanwhile fresh additions had been found necessary, and these are still incomplete so far as the 'Added Area' is concerned. The execution of the original scheme proved a very expensive undertaking and cost the municipality 95 lakhs, including a storm-water cut completed in 1883-4. The annual cost of maintenance amounts to Rs. 26,000.

Good progress has been made in lighting the city, especially in the southern area; oil lamps are being gradually replaced by gas; and the incandescent system has been extended throughout Calcutta. The Corporation have now 11,000 street lamps, of which 8,500 are gas lamps. A municipal railway conveys street refuse to the Salt Water Lakes.

The income of the Corporation has increased largely in recent years, but its expenditure has grown even more rapidly, and its indebtedness on March 31, 1904, was nearly 327 lakhs, of which 179½ lakhs has been borrowed during the last decade. The chief item of receipt is the consolidated rate, which during the last ten years has varied from 32 to 42 lakhs per annum. Next in importance are the licence tax on trades and professions, and the tax on animals and vehicles. The municipal market has also proved a source of profit to the Corporation.

The Cathedral Church of the see of Calcutta, St. Paul's, stands at the south-east corner of the Maidān. It was commenced in 1839 and consecrated in 1847, and it is practically the work of Bishop Wilson. Of the 7½ lakhs raised to build and endow the Cathedral, the Bishop gave 2 lakhs, the East India Company 1½ lakhs, and 2·8 lakhs was subscribed in England; only Rs. 1,20,000 was collected in India. It is built in a style which is known in Calcutta as Indo-Gothic: that is to say, Gothic adapted by a military engineer to the exigencies of the Indian climate. The building is 247 feet in length with a transept of 114 feet, and the tower and spire are 207 feet high. Among the many monuments to famous Englishmen who have served in this country, the most conspicuous is a life-sized kneeling figure in episcopal robes by Chantrey bearing the single word 'Heber.' The spire was rebuilt in 1897, the original one having been destroyed in the earthquake of that year.

St. John's, the old Cathedral, was commenced in 1784. It was erected to replace the still older Church of St. Anne's, which occupied the site of the modern Bengal Council Chamber and was demolished by Sirāj-ud-daula in 1756. St. John's was built chiefly by voluntary subscriptions, the site being the gift of a Rājā. In the graveyard is the mausoleum which covers the remains of Job Charnock; and slabs commemorating Surgeon William Hamilton, who died in 1717, and Admiral Watson, are built into the walls of the church. The Old Mission Church has a peculiar interest as having been erected between 1767 and 1770 by Kiernander, the first Protestant missionary to Bengal, at his own expense. In 1786 the good Swede found himself unable to defray the charges involved by his benevolent schemes, and the church was seized by the sheriff. It was rescued and restored to religious purposes by Charles Grant, afterwards the well-known East Indian Director, who paid Rs. 10,000, the sum at which it was appraised. Other churches of the Anglican communion are the Fort church of St. Peter, St. Thomas's, St. Stephen's, Kidderpore, and St. James's, besides several others belonging to missionary bodies.

The Roman Catholic Cathedral, situated in the heart of the commercial quarter, was built in 1797, taking the place of a chapel built by the Portuguese in 1700. The Greek church in the same quarter was built by subscriptions in 1780, and the Armenian church was completed in 1790. At the corner of Dalhousie Square, on the site of the old Mayor's Court-house, stands the Scottish church of St. Andrew.

The Maidān, the chief open space in Calcutta, stretches from Government House and the Eden Gardens on the north to Tolly's Nullah on the south, Chowringhee lying on the east, and the river and Fort on the west. Scattered over it are several monuments, the most conspicuous of them being the Ochterlony column, erected in honour

of Sir David Ochterlony, who, 'for fifty years a soldier, served in every Indian war from the time of Hyder downwards.' It rises 165 feet, with a Saracenic capital, and its summit commands a noble view of the city. Facing the river is a pillared archway erected by the citizens of Calcutta to perpetuate the memory of James Prinsep, founder of the science of Indian numismatics. Near Park Street is the fine bronze statue of Sir James Outram, in which he is represented with drawn sword looking round to his troops and cheering them forward. Among other monuments may be mentioned those of Lord William Bentinck, Lord Hardinge, Lord Mayo, Lord Lawrence, Lord Dufferin, and Lord Lansdowne; and the equestrian statue to Lord Roberts is a noteworthy addition to this group. A statue of Her late Majesty Queen Victoria by Frampton has recently been placed on the Maidān, waiting till it may find a more honoured position in the Hall now being erected to her memory. On the south-west side of the Maidān is the racecourse, while the rest of it is devoted to recreation grounds.

Other open spaces are the Eden Gardens, named after the Misses Eden, sisters of Lord Auckland, on the north-west of the Maidān; Dalhousie Square, in the heart of the official quarter; Beadon Square in the north of the town, named after a Lieutenant-Governor of Bengal; and a series of squares by the side of Cornwallis, College, Wellington, and Wellesley Streets. The Zoological Gardens at Alipore were opened by the (then) Prince of Wales in 1876. They are managed by an honorary committee, and are maintained chiefly by donations and subscriptions, entrance receipts, and a Government grant-in-aid. The expenditure in 1903-4 amounted to Rs. 87,000, of which Rs. 42,000 was spent on new buildings. The Government of India has made a grant of a lakh of rupees, which it has been decided to devote mainly to permanent improvements. The gardens contained, in 1904, 464 mammals, 842 birds, and 238 reptiles.

At Sibpur, on the opposite bank of the Hooghly, are situated the Botanical Gardens, which are beautifully laid out along the river and are stocked with rare tropical plants. They were founded in 1786, at the instance of Colonel Alexander Kyd, for the collection of plants indigenous to the country and for the introduction and acclimatization of plants from foreign parts. This object has been fully realized, and among the greatest triumphs of the gardens may be mentioned the introduction of the tea plant from China. They cover 272 acres, and contain a fine herbarium, a botanical library, and monuments to the first two Superintendents, Kyd and Roxburgh.

Army.

Fort William is included in the Lucknow division of the Eastern Command. The garrison consists of a battalion of British infantry, a battery of garrison artillery, a company of the Indian submarine mining corps, and a regiment of Native

infantry in the Fort, and half a squadron of Native cavalry and a regiment of Native infantry at Alipore. The volunteer forces are: (1) the Calcutta Port Defence Volunteers, in five companies, two being naval divisions, one of garrison artillery, one of submarine miners, and one of electrical engineers, with a strength in 1903–4 of 333; (2) the Calcutta Light Horse, in five troops, strength 187; (3) the Cossipore Artillery, with four six-gun batteries, strength 428; (4) the Calcutta Volunteer Rifles, with three battalions (of which the third is a cadet company), and a strength of 2,075, including cadets and reservists; and (5) the Eastern Bengal State Railway Volunteers, strength 728. The military authorities have control over the erection of buildings on the Maidān and in the Hastings ward, which lies to the south of Fort William.

Police, &c.

The Calcutta police force is under a Commissioner, a Deputy-Commissioner, and an Additional Deputy-Commissioner, and consists of 8 Superintendents, 55 inspectors, 74 sub-inspectors and European constables, 291 head constables and sergeants, including mounted men, 2,484 foot constables, and 130 river constables. It has under its control, besides the municipal area, the suburban municipalities of Cossipore-Chitpur, Māniktala, part of Garden Reach, and the river. There are 18 police stations in the 'Old Town' and 14 in the 'Added Area' and in the suburbs. The total cost of the force in 1901 was 8.66 lakhs, of which 8.15 lakhs was paid from Imperial and Provincial revenues, and the rest by local bodies and private individuals for services rendered. The proportion of police to population was 1 to 405 persons, and to area 76 per square mile. Besides ordinary police duties, the Commissioner is responsible for the working of the Arms Act and the fire brigade. The latter consists of one chief engineer, 4 engineers, one European and 4 native drivers, 3 firemen, 16 *tindals*, 84 *khalāsis*, and one inspector of warehouses. The force is equipped with six steam engines and six manual engines, and is paid for partly by fees levied on jute and other warehouses and partly by certain municipalities. The number of fires reported in 1903 in the city and suburbs, including Howrah, was 120, of which only seven were serious. The Port Commissioners maintain their own boats and staff for fires on the river.

Until 1845, there does not appear to have been any disciplined force, the only police being a number of *thānādārs* and peons for night duty; but in that year the town was divided into three police divisions, each containing a police station with six sub-stations. In 1852 the number of divisions was reduced to two, and in 1877 the present divisions and *thānas* were created. By Act XIII of 1856 a Commissioner of Police was appointed, and in 1868 the detective branch was constituted. In 1867 the suburban police was made over to the Commissioner's control, Bengal Act II of 1866 having been passed for the purpose. Until 1889

the Chairman of the Calcutta Corporation was also Commissioner of Police, but in that year the appointments were separated.

The Presidency jail on the south of the Maidān contains accommodation for 70 European and 1,214 native prisoners, the average number of prisoners during the year 1903 being 1,209. The chief industry is the printing of Government forms, and the printing work done during 1903 was valued at 1·77 lakhs; minor industries are the manufacture of mustard-oil, wheat-grinding, and carpentry. It is intended to transfer this jail to Alipore, where new buildings are being erected for the purpose. There are also a District and Central jail and a Reformatory School at Alipore, and a Criminal Lunatic Asylum at Dullunda.

Education.

At the Census of 1901, 24·8 per cent. of the total population (20·9 males and 3·8 females) were returned as literate. The percentage for Christians was 75·9, for Hindus 26·5, and for Muhammadans 12·2.

The University of Calcutta exercises, by means of the examinations for its degrees, paramount influence over English education throughout Bengal. The University building, situated in College Street, contains a library adorned with portraits of some of the more famous persons who have been at various times connected with the University.

The higher colleges in Calcutta are the Presidency, the Doveton, La Martinière, the Free Church Institution and Duff College, the London Missionary Society's Institution, the Sanskrit College, Bishop's College, St. Xavier's, the General Assembly's Institution, the Metropolitan Institution, the City, Ripon, Central, and Bangabāsī Colleges for men, and the Bethune College for women. Of these, the Presidency, the Sanskrit, and the Bethune Colleges are Government institutions; the first was established in 1855 and the second as early as 1824; the third was founded in 1849 by Mr. Bethune, and maintained by him till his death in 1851. It was then maintained by Lord Dalhousie until 1856, and from that date by the Government. The Doveton College was first opened in 1823 for the education of Christian boys under the name of the Parental Academic Institution; but it was subsequently called after Captain J. Doveton, who gave it an endowment of 2·3 lakhs. La Martinière was founded by General Claud Martin, and was opened in 1836. Bishop's College was founded by Bishop Middleton in 1820, and was at first located at Sibpur on the site now occupied by the Civil Engineering College. The College of the Scottish Church was founded in 1830 and St. Xavier's in 1860. The second-grade colleges are the Madrasa, the Albert College, the Armenian College, and the Church Missionary College. The Madrasa (for Muhammadans) was founded and endowed by Warren Hastings in 1781; in 1873 it received additional funds from the Hooghly Muhammadan Educational Endowment, and it is also assisted by Government. The

Armenian College was opened in 1821, and is managed by trustees. The Sibpur College for Engineering (*see* HOWRAH TOWN), situated on the opposite bank of the Hooghly, was opened by Government in 1880.

Calcutta contains 75 schools teaching up to the standard for the entrance examination of the University, and a large number of primary schools. The oldest Christian school is the Calcutta Free School, which was founded in 1789 from the united funds of the Old Calcutta Charity and the Free School Society, which then amounted to 3 lakhs.

The Calcutta Medical College is a Government institution, which was opened in 1835 and had 519 pupils in 1903–4; there are also four private medical schools with 454 pupils. Of the latter the oldest is the Calcutta Medical School, to which the Albert Victor Hospital has lately been attached.

The two most important hostels under Government management are the Eden Hindu hostel and the Elliott Madrasa hostel. The former is intended chiefly for the accommodation of such Hindu pupils of the Presidency College and of the Hindu and Hare schools as do not live with their parents or guardians; the latter is for Muhammadans studying at the Calcutta Madrasa. In 1903–4 the number of inmates in the Eden hostel was 247 and in the Elliott hostel 222. The total expenditure of the former amounted to Rs. 30,000, and that of the latter, exclusive of messing charges, to Rs. 4,500. Of this Government paid Rs. 700 and Rs. 1,400 respectively, chiefly for medical attendance and superintendence. The average cost of a student was Rs. 10 per month per head in the former, and a little over Rs. 3 in the latter.

The Government School of Art attached to the Government Art Gallery was attended by 241 pupils in 1903–4. An aided industrial school was attended by 47 pupils, and 3 unaided schools of Art taught 182 pupils. Besides, there are two schools for the blind and a deaf and dumb school. There were four training schools for mistresses in 1900–1, and one Normal school for the training of schoolmasters. In addition to the Bethune College, there were six other higher-class female institutions in Calcutta.

The total number of pupils under instruction increased from 25,124 in 1883 to 40,724 in 1892–3 and to 43,979 in 1900–1, while 39,524 boys and 8,277 girls were at school in 1903–4, being respectively 46·8 and 19·3 per cent. of the total of school-going age. The number of educational institutions, public and private, in that year was 531, including 20 Arts colleges, 69 secondary, 311 primary, and 131 special schools. The expenditure on education was 18·06 lakhs, of which 6·22 lakhs was met from Provincial funds, Rs. 11,000 from municipal funds, and 8·16 lakhs from fees.

Calcutta has four daily newspapers owned and edited by Englishmen:

namely, the *Englishman*, the *Indian Daily News*, the *Statesman*, and the *Empire*, the latter being an evening newspaper which has recently (1906) been started. The other journals and magazines under European management include a fortnightly illustrated paper, a weekly paper dealing with finance and commerce, an illustrated engineering journal, and three weekly papers devoted to sport. Other periodicals deal with religious subjects, the interests of planters and volunteers, medicine, railways, horticulture, and literary and general matters; one of the latter, the *Calcutta Review*, is an old-established publication of some repute. There are also five daily newspapers published in English but owned and edited by natives: namely, the *Bengalee*, *Amrita Bazar Patrikā*, *Indian Mirror*, *Hindoo Patriot*, and *Bande Mataram*. No less than twenty-three vernacular papers are published in Calcutta, but few of these are daily journals or of any great importance; the most influential are the *Hitabādī*, the *Basumatī*, and the *Bangabāsī*, all weekly papers.

Medical.

The chief hospitals are the Medical College, Eden, Ezra, Syāma Charan Law Eye, Presidency General, Campbell, Police, Sambhu Nāth Pandit, and Dufferin Victoria Hospitals, the Mayo Native Hospital with three dispensaries and the Chandney Hospital attached to it, and the Kidderpore Municipal and Dockyard Dispensaries. Of these, the Dufferin Victoria Hospital and the Eden Hospital are for women only. The Medical College Hospital was originally started in 1838 with thirty beds. It was very largely attended and, the accommodation having soon been found quite insufficient, an enlarged building was opened on the present site in 1852. The Eden or lying-in Hospital, the Ezra Hospital for Jews, and the Eye Infirmary were subsequently added to it. The Presidency General Hospital for Europeans dates from about the middle of the eighteenth century. The central block was purchased by Government in 1768, and two wings were added in 1795. The foundation stone of a new block was laid in 1898. This is one of the best hospitals in India; it contains accommodation for 233 patients, and has been provided with all modern requirements and conveniences. The Campbell Hospital, started in 1867, is the largest hospital in India and has accommodation for 752 patients. The Police Hospital, with 211 beds, was opened in 1865 for the treatment of the members of the Calcutta police. The Mayo Native Hospital, the successor of the old Chandney Hospital, contains 105 beds and was opened in 1874. The total number of patients treated in these institutions during 1903 was 274,000, of whom 25,000 were in- and 248,000 out-patients. Of these 163,000 were men, 51,000 women, and 59,000 children. These charities are mainly dependent on Government for their support. In 1903, out of a total income of 9·15 lakhs, Government gave 6·39 lakhs; 1 lakh was supplied from Local funds; the Corporation contributed Rs. 46,000;

interest on investments amounted to Rs. 25,000; while only Rs. 7,000 was subscribed, the balance being made up from fees from paying patients. There are also two Lunatic Asylums entirely under Government control, while a Leper Asylum has lately been erected.

Vaccination is compulsory, and is controlled by the Health department of the Corporation. In 1903-4 the number of persons successfully vaccinated was 22,492.

[*Census Reports*; H. E. Busteed, *Echoes from Old Calcutta* (third edition, 1897); R. B. Hyde, *Parochial Annals of Bengal* (Calcutta, 1901); A. K. Ray, *History of Calcutta* (Calcutta, 1902); S. C. Hill, *Bengal in* 1756-7 (1905); C. R. Wilson, *Old Fort William in Bengal* (1906); H. E. A. Cotton, *Calcutta Old and New* (Calcutta, 1907).]

Calcutta, Suburbs of.—A name given to the three suburban municipalities of COSSIPORE-CHITPUR (population, 40,750), MĀNIKTALA (32,387), and GARDEN REACH (28,211), which are thus grouped as a subdivision of the District of the Twenty-four Parganas, Bengal. The area of the subdivision is 10 square miles, and the population in 1901 was 101,348, as compared with 87,508 in 1891, the density being 10,135 persons per square mile. Cossipore-Chitpur is north and Māniktala north-east of Calcutta, while Garden Reach bounds the city on the south-west

Calcutta, South Suburbs.—Town in the head-quarters subdivision of the District of the Twenty-four Parganas, Bengal, comprising a portion of the southern suburbs of Calcutta. Population (1901), 26,374, of whom 20,165 were Hindus, 5,849 Musalmāns, and 350 Christians. The application of the term 'suburbs of Calcutta' has varied widely at different periods. By Act XXI of 1857 the 'suburbs' were defined as including all lands within the general limits of the PANCHĀNNAGRĀM estate; and under the Bengal Municipal Act, 1876, they were further defined as comprising the present municipalities of Cossipore-Chitpur, Māniktala, Garden Reach, South Suburbs, and Tollygunge, as well as so much of Calcutta as lay outside the limits of the 'Old Town,' which was bounded by Lower Circular Road and Tolly's Nullah. This unwieldy municipality, known as the Suburban municipality, was in 1888 split up into four parts, the 'Added Area' and 'Fringe Area Wards' (defined in article on CALCUTTA) being added to Calcutta, and the municipalities of Cossipore-Chitpur and Māniktala being created. These deductions still left the South Suburban municipality of unmanageable size, and, accordingly, in 1897 the Garden Reach municipality and in 1901 the Tollygunge municipality were separated from it. The constitution of the present 'South Suburbs' municipality therefore dates from 1901. The income during the three years following its constitution has averaged Rs. 52,000, and the expenditure Rs. 32,000. In 1903-4 the income was Rs. 79,000, including Rs. 11,000 derived

from a tax on houses and lands and Rs. 29,000 obtained from the sale-proceeds of Government securities and the withdrawal of savings bank deposits. The expenditure in the same year was Rs. 52,000, of which Rs. 29,000 represented the outlay on the introduction of a supply of filtered water. The principal villages now within the municipality are Barisā and Behāla.

Calcutta and Eastern Canals.—A system of navigable channels in the Twenty-four Parganas, Khulnā, Backergunge, and Farīdpur Districts of Bengal and Eastern Bengal and Assam, extending over a length of 1,127 miles, of which 47 miles, including Tolly's Nullah, are artificial canals, and the remainder are natural channels, mainly tidal creeks in the SUNDARBANS. These stretch eastwards from the Hooghly across the Ganges delta and afford means of intercommunication between the mouths of the latter river. The channels are under the supervision and control of Government, and tolls are charged on vessels using the artificial canals.

This is one of the most important systems of river canals in the world, judged by the volume of the traffic, which averages 1,000,000 tons per annum, valued at nearly four millions sterling. The situation of Calcutta makes it the natural outlet for the Ganges valley; and this position has been enormously strengthened by the construction of railways, but other measures were necessary to enable it to tap the trade of the Brahmaputra valley and to focus the rich traffic of the eastern Districts. The intermediate country is a maze of tidal creeks, for the most part running north and south but connected here and there by cross-channels, wide near the sea-face but narrow and tortuous farther inland. These inland channels are constantly shifting as the deposit of silt raises their beds, while on the other hand the great estuaries near the sea-face are not navigable by country boats from June to October, owing to the strong sea-breezes which prevail during the south-west monsoon. This system of canals was devised, therefore, in order to allow country boats to pass from the eastern Districts to Calcutta by a direct inland route, and the problem has been to keep the natural cross-channels clear of silt, and to connect them with each other and with Calcutta by a system of artificial canals. The channels have been in use for many years; and it is along them that the rice, jute, and oilseeds of East and North Bengal, the tea of Assam and Cāchār, and the jungle produce of the Sundarbans pour into Calcutta, while they also carry the exports of salt, piece-goods, and kerosene oil from Calcutta to those Districts.

Before the opening of TOLLY'S NULLAH, boats could approach Calcutta only by a route close to the sea-face which brought them into the Hooghly by the Bārātala creek, 70 miles below Calcutta; and this route was not only circuitous but was impracticable for country boats during

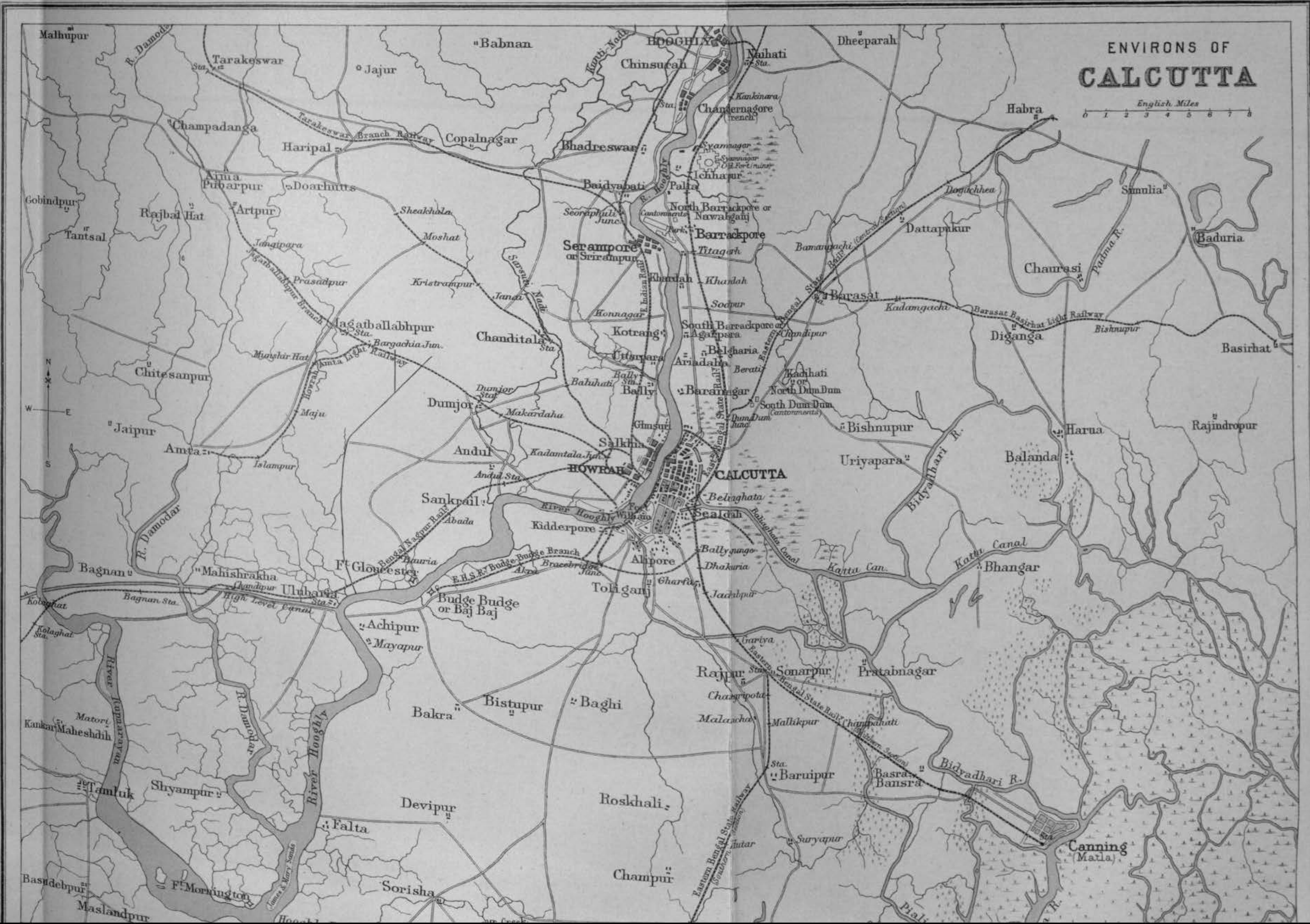
the rainy season. The pioneer of the system was Major Tolly, who in 1777 canalized an old bed of the Ganges, from its confluence with the Hooghly at Hastings, a little south of Fort William, in Calcutta, south-eastwards to Gariyā (8 miles). From this point the canal (known as Tolly's Nullah) was carried east to meet the Bidyādharī river at Sāmukpotā, and thus gave access to an inner route which leads eastwards from Port Canning. In 1810 a further step was taken to facilitate access to Calcutta. An old channel through the SALT WATER LAKES, east of the city, was improved and led westwards by what is now known as the Beliāghāta canal in the neighbourhood of Sealdah. Between 1826 and 1831 a new route was opened between Calcutta and the Jamunā river, following the same direct easterly course as the present Bhāngar canal, the object being to relieve the pressure on Tolly's Nullah; a number of tidal channels were utilized and connected by six cuts to form a continuous eastward route. The next step was to cut the Circular canal from Chitpur, parallel with the Circular Road, to meet the old Eastern canal at Beliāghāta, and this was completed in 1831. These canals were still choked by the increasing stream of traffic; and, in order to relieve them, the New Cut was opened in 1859, leading from Ultādānga, a point on the Circular canal 3 miles east of Chitpur, south-east to Dhāpa on the Beliāghāta canal. Finally the Bhāngar channel was canalized in 1899 for a length of 15 miles, thus completing the inner channel which had been commenced in 1831.

The objective of this system is Barisāl, the head-quarters of the great rice-growing District of Backergunge, situated 187 miles east of Calcutta. There are three alternative routes to Barisāl. The one generally followed is along the Bhāngar canal and Sibsā river to Khulnā, and thence by the Bhairab river to Pirojpur and Barisāl. An alternative route between Calcutta and Kālīganj on the Ichāmatī river follows Tolly's Nullah and the Bidyādharī river to Port Canning, and then strikes north-eastward. This is called the Outer route, and two similar alternative routes branch off southwards in Khulnā District. The main steamer route follows the Hooghly river as far as the Bārātala creek, and then turns east and north-east, meeting the two routes previously described at Pirojpur.

Included in this system is an important channel, known as the Mādarīpur Bīl route, which connects the Kumār and Madhumatī rivers, and is used by jute-laden steamers during the rains; it shortens the journey between Khulnā and Mādārīpur by 89 miles. The construction of this route was commenced in 1900, and has since been completed. The channel is being deepened and widened for the purpose of allowing steamers and flats drawing 6 feet of water to use the route during the jute season; and the question of still further improving it, so as to make it navigable throughout the year, is under consideration. The net


CALCUTTA
One English Mile
P.O.-Post Office, P.S.-Police Station.
References
1 Economic Museum
2 Dalhousie Institute
3 Government Dispensary
4 Department of Commerce & Industry
5 Military & Foreign
6 Office of the Justices
Monuments
7 Lord Bentinck's Statue
8 Lord Auckland's
9 Lord Canning's
10 Lord Hardinge's
11 Lord Lawrence's
12 Lord Mayo's
13 Sir W. Peel's
14 Magdala
Theatres
15 Corinthian Theatre
16 Theatre Royal
17 Opera House
18 Asiatic Society
19 Site of "The Black Hole"
N
E
W
S
COSSIPORE
ICHAPUR
GHUSURI
CHITPUR
SALKHIA
HOWRAH
RAMKRISHTOPUR
BADEH SIBPUR
SIBPUR
MANIKTOLA
BALLYGUNGE
KIDDERPORE
ALIPORE
GARDEN REACH
TOLLYGUNGE
SOUTH SUBURBAN
FORT WILLIAM
MAIDAN
HOOGHLY
RIVER
East Indian Railway
Eastern Bengal State Railway
Circular Canal
New Canal
Sealdah Station
Eden Gardens
Botanical Garden
Dock No 1
Dock No 2
Belvidere
Grand Trunk Road
Boat Canal

J.G.Ba



ENVIRONS OF
CALCUTTA
English Miles
0 1 2 3 4 5 6 7 8
N
W
E
S
Malhupur
R. Damodar
Tarakeswar
Sta.
Babnan
Jajur
Kanti Nadi
HOOGHLY
Chinsurah
Naihati
Sta.
Dheeparah
Kankinara
Chandernagore
(French)
Habra
Champadanga
Tarakeswar Branch Railway
Copalnagar
Haripal
Bhadreswar
Syamnagar
Amta
Pubarpur
Doarhutta
Baidyabati
Ichhapur
Palta
Dogachhea
Simulia
Gobindpur
Rajbal Hat
Artpur
Sheakhala
Seoraphuli Junc.
North Barrackpore or Nawabganj
Cantonments
Park
Barrackpore
Dattapukur
Tantsal
Moshat
Serampore
or Srirampur
Titagarh
Bamanghachi
Baduria
Jangipara
Jagatballabhpur Branch
Prasadpur
Kristrampur
Saraswati Nadi
Janai
Khardah
Khardah
E. Indian Rail.
Chaurasi
Padma R.
Barasat
Kadamgachi
Barasat Basirhat Light Railway
Konnagar
Sodpur
Jagatballabhpur
Sta.
Bargachia Jun.
Chanditala
Sta.
Kotrang
South Barrackpore or Agarpara
Chandipur
Diganga
Bishnupur
Basirhat
Munshir Hat
Howrah Amta Light Railway
Uttarpara
Ariadaha
Belgharia
Chitesanpur
Bally
Bally
Balluhati
Berati
Kadihati or North Dum Dum
Dumjor Stat.
Dumjor
Baranagar
South Dum Dum
(Cantonments)
Dum Dum Junc.
Maju
Makardaha
Jaipur
Ghusuri
Bishnupur
Harua
Rajindrapur
Salkhia
Amta
Islampur
Andul
Kadamtala Jn.
Andul Sta.
HOWRAH
CALCUTTA
Uriyapara
Balanda
Bidyadhari R.
Sankrail
Beliaghata
Sealdah
Beliaghata Canal
River Hooghly
Ft. William
Kidderpore
Abada
Bengal Nagpur Rail.
R. Damodar
Ballygunge
Alipore
Bhangar
Katta Canal
Ft. Gloucester
Bauria
E.B.S.Ry Budge Budge Branch
Akra
Bracebridge Junc.
Dhakuria
Katta Can.
Bagnan
Mahishrekha
Chandipur
Uluberia
Sta.
Tollyganj
Gharfa
Jadabpur
High Level Canal
Kolaghat
Bagnan Sta.
Budge Budge
or Baj Baj
Kolaghat Sta.
Achipur
Mayapur
Gariya
Rajpur
Sta.
Sonarpur
Eastern Bengal State Rail.
Pratabnagar
River Rupnarayan
R. Damodar
Bakra
Bistupur
Baghi
Changripota
Malancha
Mallikpur
Champahati
Matori
Kankar
Maheshdih
River Hooghly
Sta.
Baruipur
Basra
Bansra
Bidyadhari R.
Tamluk
Shyampur
Devipur
Roskhali
Falta
Eastern Bengal State Railway (Southern Section)
Suryapur
Jhutar
Canning
(Matla)
Champur
James & Mary Sands
Basudebpur
Ft. Mornington
Sorisha
Maslandpur

revenue of these canals in 1902–3 was 1·4 lakhs, being 2 per cent. on the capital outlay, and the estimated value of cargo carried during the year was 497 lakhs. In 1903–4 the receipts amounted to 4 lakhs and the net revenue was 1·3 lakhs; while the total capital outlay up to March 31, 1904, was 77·1 lakhs.

Calicut Tāluk.—Coast subdivision and *tāluk* in the centre of Malabar District, Madras, lying between 11° 10′ and 11° 33′ N. and 75° 45′ and 76° 9′ E., with an area of 379 square miles. It contains 74 *amsams*, or parishes. The population increased from 237,682 in 1891 to 255,612 in 1901. The land revenue demand amounted in 1903–4 to Rs. 2,20,000. The *tāluk* contains the municipality of CALICUT (population, 76,981), the head-quarters of the District, and the seaport of Beypore. The Conolly Canal, about 3 miles long, connects the Korapula and Kallāyi rivers. On the east the *tāluk* is bounded by the plateau of the Wynaad, the chief road to which runs through it. The whole is covered with picturesque undulations, well wooded and interspersed with rice-fields.

Calicut City.—Head-quarters of the *tāluk* of the same name, and also of Malabar District, Madras, situated in 11° 15′ N. and 75° 47′ E., on the Madras Railway, 414 miles from Madras city. It is a picturesque place, the streets winding through continuous groves of palms and other tropical vegetation. In addition to the various public buildings and institutions usual in a District head-quarters, it contains a branch of the Bank of Madras, and a Lunatic Asylum with accommodation for 135 persons. The chief suburbs are at West Hill, 3 miles north of the old town, where are the barracks of the British infantry detachment and the Collector's house, both on small hills; and at Kallāyi, the centre of the timber traffic at the mouth of the Kallāyi river.

Calicut is the fourth largest city in the Presidency, and in 1901 had a population of 76,981 (42,744 Hindus, 30,158 Muhammadans, and 4,007 Christians). In 1871 its inhabitants numbered 47,962; in 1881, 57,085; and in 1891, 66,078, so that it is a growing place. The rate of increase during the last decade was as high as 16 per cent. The climate is on the whole healthy, though relaxing; but the want of a drainage and water-supply system renders the crowded quarters of the city insanitary. Calicut was constituted a municipality in 1869. The income and expenditure during the decade ending 1900 averaged Rs. 66,000 and Rs. 63,000 respectively. In 1903–4 the income was Rs. 83,000 (mainly derived from the taxes on houses, land, and professions), and the expenditure was Rs. 81,000.

The vernacular form of Calicut is Kolikod, which means 'cock-fort'; and the tradition regarding its foundation is that when Cheramān Perumāl, the last of the kings of Malabar, retired to Mecca in the ninth century and divided his kingdom among his chiefs, he gave to the Zamorin of Calicut as much land as a cock crowing from Talli temple

could be heard over. The Zamorins, with the help of Arab traders settled at Beypore, soon extended their powers and made the town the centre of a dominion extending from Tikkodi to Chetwai. The Arab writers of the thirteenth century describe Calicut as one of the great ports of the west coast, full of magnificent buildings, and noted for the security to trade afforded by the power of the Zamorin and the justice with which he treated foreign settlers. In the fifteenth century the place seems to have been the most important town in Malabar. It was the first port of India visited by Europeans, and gave its name to calico, one of the chief articles of the early trade; but, owing to the opposition of the Arab traders, the European settlements here were not so important as those at COCHIN and CANNANORE. The Portuguese adventurer Covilham was the first European to visit Calicut (in 1486); but trade only began with the arrival of Vasco da Gama in 1498. A factory was established, but Da Gama was badly treated by the Zamorin. Two years later Cabral established a factory of seventy Portuguese, which was immediately destroyed by the Māppillas, and most of the inmates murdered. In revenge the town was bombarded, and the port was then left alone by the Portuguese for some years. In 1510 Albuquerque attacked Calicut at the instigation of the Rājā of Cochin, but was repulsed. A year later the Zamorin allowed the Portuguese to build a fort on the north bank of the Kallāyi river; but he continued secretly hostile to their trade, the fort was abandoned in 1525, and the Portuguese did not again attempt a settlement at Calicut itself.

The English connexion with the town dates from 1615, when Captain Keeling arrived with three ships and concluded a treaty with the Zamorin; but no settlement was established till 1664, when a trading agreement was made with the Zamorin by the East India Company. The Zamorin, however, gave little encouragement to the Company, and it was not until 1759 that they were allowed to tile their factory. The French settlement dates from 1698. During the wars with France it thrice came into the possession of the English, but was finally restored to France in 1819. It at present consists of about 6 acres of ground, called the Loge, near the sea-shore south of the pier. The Danish Government established a factory at Calicut in 1752. It was partially destroyed in 1784, and soon afterwards incorporated in the British settlement. The Dutch never had any station at the place.

During the Mysore Wars the town suffered severely, and was twice pillaged by the Muhammadan armies, in 1773 and 1788. On the latter occasion Tipū Sultān made a determined effort to establish a rival capital at Ferokh on the south bank of the Beypore river, but the attempt failed. In 1790 Calicut was occupied by the British in their operations against Tipū, and by the Treaty of Seringapatam in 1792 it finally passed under the dominion of the Company.

Calicut now ranks second among the ports of Malabar and fourth among those in the Presidency. During the five years ending 1902–3 the value of its imports averaged 72½ lakhs, and of its exports 132 lakhs. The corresponding figures for 1903–4 were 57½ lakhs and 136 lakhs. Grain and salt form the bulk of the imports, while one-fourth of the exports consists of coffee. The city contains a steam spinning mill, established in 1883, with an annual out-turn of 550 tons of cotton yarn; a steam manure factory, which produces every year about 1,950 tons; and a steam saw-mill in the suburb of Kallāyi, at which timber to the value of 2 lakhs is sawn annually. There are also steam tile-works and coffee-curing works and a steam oil-mill. The chief temple of Calicut is held in much repute.

Calimere, Point (the *Calligicum* of Ptolemy).—A low promontory in the Tirutturaippūndi *tāluk* of Tanjore District, Madras, situated in 10° 18′ N. and 79° 51′ E., 40 miles from Point Pedro in Ceylon. A lighthouse was erected on it in 1902. Inland stretches a 'reserved' forest extending over 6½ square miles, where antelope, spotted deer, and wild hog are to be met with. Ponies are bred in the neighbourhood in small numbers, and tobacco is largely grown. To bathe in the sea at Point Calimere is considered sacred by the Hindus, and the place has a temple which is an object of pilgrimage. The promontory was once used as a sanitarium, but it is now said to be malarious from April to June.

Calingā.—Name of an ancient kingdom in the north of the Madras Presidency. *See* KALINGĀ.

Calingapatam.—Port in the Chicacole *tāluk* of Ganjām District, Madras, situated in 18° 20′ N. and 84° 8′ E., at the mouth of the Vamsadhāra river, 17 miles from Chicacole. Population (1901), 5,019. It was one of the early seats of Muhammadan government in the Telugu country. Signs of its ancient importance are still visible in the ruins of many mosques and other buildings. After rain, small gold coins of great age are found on the site of the old city. Having a safe anchorage, it is a regular place of call for steamers. The port is an open roadstead, protected on the south by a sandy point and some rocks which extend seaward about half a mile from the shore. These rise above water near the land, but are submerged farther out. On this sandy point, about a mile south of the port, stands a lighthouse 73 feet in height, exhibiting a white occultating light, visible 14 miles at sea in clear weather. It is protected from the sandhills which are drifting towards it, and threaten to bury it, by a casuarina plantation. The exports from Calingapatam, consisting chiefly of grain and pulse, myrabolams, and turmeric, were valued in 1903–4 at 6 lakhs. The imports, mainly haberdashery, glass-ware, and gunny-bags from Indian ports, were valued at only Rs. 12,000. The coasting trade has decreased con-

siderably since the construction of the East Coast Railway. Calingapatam possesses one of the four salt factories of the District. The pans cover an area of 517 acres, and yielded a revenue in 1903-4 of Rs. 3,27,000.

Calpee.—Town and *tahsīl* in Jālaun District, United Provinces. *See* KĀLPĪ.

Cambay (*Khambāyat* or *Khambhāt*).—Feudatory State in the Political Agency of Kaira, Bombay, lying at the head of the gulf of the same name, in the western part of the province of Gujarāt, between 22° 9′ and 22° 41′ N. and 72° 20′ and 73° 5′ E., with an area of 350 square miles. It is bounded on the north by the District of Kaira; on the east by Kaira and Baroda; on the south by the Gulf of Cambay; and on the west by the Sābarmatī river, separating it from Ahmadābād. The boundaries of the State are very irregular; some villages belonging to the Gaikwār of Baroda and to the British Government are entirely surrounded by Cambay territory, while Cambay villages are found in Kaira District. The country is flat and open, interspersed here and there, generally in the vicinity of the villages, with groves of fine trees, such as the mango, tamarind, banyan or *bar*, *nīm*, and *pīpal*. From the position of the State between the Sābarmatī and Mahī, both of which are tidal rivers, the soil is so soaked with salt that the water becomes brackish at a little distance below the surface.

Physical aspects.

Cambay is a gentle, undulating, alluvial plain, without any rock exposure. The fauna does not differ from that of the neighbouring British District of Kaira, though the former presence of tigers in large numbers is said to be indicated by the site of a village named Vāgh Talao or 'tiger tank.' The climate is equable, the temperature rising to 108° in May, when the minimum is 75°, and falling as low as 46° in January, at which season 84° is the maximum. The annual rainfall averages 31 inches.

The name is said to be derived from *khambha* or *stambha-tirth*, the pool of Mahādeo under the form of the pillar god. Cambay is mentioned by Masaudi (913); but the prosperity of the town is traditionally referred to the grant of its present site to a body of Brāhmans in 997. During the eleventh and twelfth centuries Cambay appears as one of the chief ports of the Anhilvāda kingdom; and at the conquest of that kingdom by the Musalmāns in 1298 it is said to have been one of the richest towns in India.

History.

According to Lieutenant Robertson's *Historical Narrative of Cambay*, the Pārsīs of Gujarāt sailed from Persia about the end of the seventh or beginning of the eighth century. A great number of their ships foundered in a storm, and only a few arrived at Sanjān, about 70

miles south of Surat. They obtained permission to land after some difficulty, and on certain conditions, the chief of which were that they should speak the Gujarātī language and abstain from beef. The Pārsīs remained for many years in the vicinity of Sanjān, pursuing a coasting trade; but eventually they spread over the neighbouring districts, and became so numerous at Cambay that they outnumbered the original inhabitants and took possession of the town. After a short period, however, they were driven out with great slaughter by the Hindus, who held the territory until conquered by the Muhammadans in 1298.

In the fifteenth century, with the growing wealth and power of the Gujarāt kingdom, Cambay regained its former prosperity, and at the beginning of the sixteenth century formed one of the chief centres of commerce in Western India. Large vessels unloaded their cargoes at Gogha, whence they were conveyed in small craft to Cambay. In 1538 the Portuguese plundered the town, and the country remained in a state of disorder until 1573, when it was reduced by the emperor Akbar. Though free from disturbance during the next century, the gradual silting up of the harbour drove a large part of the Cambay trade to Surat. Its manufactures, however, still retained their former importance; and in 1616 the English, followed by the Dutch in 1617, established factories there. On the death of Aurangzeb, when the Mughal power commenced to decline, the country was exposed to the ravages of the Marāthās, who exacted large contributions. Cambay appears to have been established as a distinct State about 1730. The founder of the present family of chiefs was Momin Khān, the last but one of the Muhammadan governors of Gujarāt. While he held the office of governor, his son-in-law Nizām Khān had charge of Cambay. On Momin Khān's death in 1742 his son Muftākhir (Momin Khān II) basely compassed the death of Nizām Khān and assumed the government of Cambay. The Marāthā leaders had already partitioned Gujarāt; but Momin Khān II successfully resisted the claims of the Peshwā to tribute, until, by the Treaty of Bassein, the Peshwā's rights over Cambay were transferred to the British. The principal item of this disputed tribute consisted of a nominal half-share in the sea and land customs, deducting cost of collection. The British Government found much difficulty in inducing the Nawāb to revise the complicated and onerous tariff of sea customs, which was highly injurious to trade; but in 1856 an arrangement was made by which the methods of collection were assimilated to those obtaining in civilized countries.

The ruler is a Muhammadan of the Shiah sect. He has received a *sanad*, guaranteeing any succession to his State that may be legitimate according to Muhammadan law. He is entitled to a salute of 11 guns. A tribute of Rs. 21,924 is paid to the British Government.

Cambay contains 2 towns and 88 villages. The population was

89,722 in 1891, but fell to 75,225 in 1901, owing to the famine of 1899–1900. The density is 215 persons to the square mile. Hindus form 81 per cent. of the total, Musalmāns 13 per cent., and Jains 5 per cent. The only important town is CAMBAY. The most numerous Hindu castes are Kolīs (14,000), Kunbīs (12,000), and Rājputs (5,000). They are mainly cultivators, though Kunbīs now work as carnelian polishers, an art formerly practised by the Musalmāns. Pārsīs have ceased to be of importance, and the decline of trade has taken many of the trading castes to Bombay. Nearly half the population (30,000) is supported by agriculture. The Irish Presbyterian Mission has a branch at Cambay.

Population.

Towards the north and west the soil is generally black, and well suited for the cultivation of wheat and cotton. To the east it is fit for only inferior sorts of grain, abundant crops of which are grown in favourable years. Of the total area, 84 square miles are unfit for cultivation and 224 are cultivable. Of the latter, 154 square miles were under cultivation in 1903–4, the residue being composed of fallow (11 square miles) and cultivable waste (59 square miles). Only 903 acres of land were irrigated. The chief crops are the ordinary varieties of millets and pulse, rice, wheat, cotton, indigo, and tobacco. The cultivation of indigo has of late years greatly fallen off. Besides the Nareshwar tank and the Alang canal, there are 1,292 wells and 36 tanks for irrigation purposes. The supply of drinking-water is chiefly drawn from wells, in which water is found throughout the greater part of the year. Near the town of Cambay, skirting the shore of the gulf, and along the banks of the Mahī and Sābarmatī rivers, stretch vast tracts of salt marsh land submerged at high spring-tides. About three-quarters of a square mile of salt-waste is in process of reclamation by means of an embankment built along the seashore, which holds up rain-water.

Agriculture.

The chief articles of manufacture are salt, cloth, carpets, embroidery, and carved carnelians, which are imported from Ratanpur and other places in the Rājpīpla State. The chocolate-coloured stone is brought from Kāthiāwār; agates come from Kapadvanj and Suklatirtha on the Narbadā river, and from Rājkot in Kāthiāwār. There are two cotton-ginning factories and 1,400 hand-looms, supporting over 3,000 persons. An experimental school for weaving was opened in 1904.

Trade and communications.

During the thirteenth, fourteenth, and fifteenth centuries Cambay had a trade history of much interest. At the close of the thirteenth century it was one of the two chief ports of Western India, whence were exported indigo in abundance, cotton, fine cloth, and large quantities of hides. Its chief imports were gold, silver, copper, *tūtia* (copper sulphate), madder from the Red Sea, and horses from the

Persian Gulf. By the opening of the sixteenth century Cambay had added many other articles to its export list, and had dealings with fifteen marts in India, Persia, Arabia, and East Africa. The transfer of trade to Surat at the close of the sixteenth century dealt a severe blow to Cambay's importance, and by 1802 its trade had dwindled to a very low ebb. Trade revived during the nineteenth century and was valued at one lakh in 1874–5. The total imports in 1897–8, previous to the severe famine of 1899–1900, consisted chiefly of molasses, timber, clarified butter, grain, carnelians, metal, piece-goods, silk, coco-nuts, and sugar, and were valued at more than 5 lakhs; while the exports, including tobacco, wrought carnelians, and sundries, were worth 4 lakhs. The total value of the sea-borne trade in 1903–4 was 6·5 lakhs. Before the advent of railways, goods and passengers were carried by boat to Bombay and other ports. Now the passenger traffic is almost entirely by rail. The mode of transit into the interior by native carts, camels, or pack-bullocks has been discontinued since the opening of a line from Cambay to Petlād. For communication by water, except during the monsoon months, boats of under 6 tons at ordinary tides, and under 50 tons at spring-tides, ply between Cambay and Bombay, Surat, Broach, Gogha, and other ports. The head of the gulf forms neither a safe nor commodious harbour, in consequence of the constant shifting of its bed from the force of the tides and the currents of the rivers Mahī and Sābarmatī. Ships of more than 50 tons never visit Cambay. The lightship at the port exhibits a steady white light over an area of 8 miles.

There are 45 miles of unmetalled roads in the State, the two longest being from Cambay to Golana (16 miles) and from Cambay to Kanavada ($16\frac{1}{2}$). The Cambay-Petlād Railway, a broad-gauge line 22·42 miles in length, connecting with the Bombay, Baroda, and Central India Railway at Anand, was opened in 1901 at a cost of 15 lakhs, of which the State contributed 9. There is only one post and telegraph office in the State.

Famine.

In 1899–1900 Cambay State suffered severely from famine. Relief measures commenced in October, 1899, and were closed in July, 1900, though gratuitous relief was continued till the end of January, 1901. The highest number of persons on the relief works was 3,174 in February, and of persons gratuitously relieved, 1,948 in June. More than Rs. 80,000 was spent on relief, of which Rs. 48,371 was devoted to works and Rs. 32,432 to gratuitous relief. The loss of cattle is estimated at more than 30,000.

Administration.

The Nawāb exercises full jurisdiction within the State, but cannot try British subjects for capital offences without the Political Agent's permission. The Collector of Kaira exercises the usual political control, but does not ordinarily entertain appeals.

The State has a revenue of $5\frac{1}{2}$ lakhs and an expenditure of 4 lakhs, of which Rs. 65,000 go into the chief's purse. The chief sources of revenue are land revenue, excise, and customs. The land revenue is regulated by a survey settlement introduced in 1894, which replaced the old *bhāgbatai* system of payment in kind. The settlement increased the revenue by nearly half a lakh. The survey rates are: for 'dry' land, from Rs. 3-3 to Rs. 6-0 per acre; for rice land, from Rs. 6-6 to Rs. 10; while garden rates are merged in the 'dry-crop' rates in the shape of a subsoil water assessment. The total land revenue demand amounts to 3 lakhs, while the local fund cess of half an anna per rupee of assessment brings in Rs. 14,000. In 1901-2 British currency was substituted for the State coins. In 1880 the Cambay salt-works were closed, the output since then being restricted to the requirements of the Darbār, namely, 500 maunds. No opium may be produced in the State. Excise arrangements have been controlled by the State since 1904, the previously existing lease to the British Government having expired in that year. During the last ten years the State has spent more than 6 lakhs on public works, including many schools, roads, and a dispensary.

The military force consists of 236 men, for the most part undisciplined. The police number 170, exclusive of village watchmen numbering 366. The State contains one jail, with a daily average in 1903-4 of 25 prisoners. Public instruction is imparted in 26 schools, including a high school and 2 girls' schools, the total number of pupils in 1903-4 being 1,880. Besides these, 15 private schools have 551 pupils. There are 2 hospitals and 2 dispensaries, treating about 33,000 patients a year at a cost of Rs. 7,000. A veterinary dispensary is also maintained at a cost of Rs. 1,000. More than 1,400 persons are vaccinated annually.

Cambay, Gulf of.—The name for the strip of sea which separates the peninsula of Kāthiāwār from the Northern Bombay coast. The gulf was in ancient times much frequented by Arab mariners. Surat lies at the eastern point of its mouth, the Portuguese settlement of Diu at the western mouth, and Cambay town at its northern extremity. The gulf receives two great rivers, the Tāpti and Narbadā, on its eastern side, the Mahī and Sābarmatī on the north, and several small rivers from Kāthiāwār on the west. Owing to the causes mentioned under CAMBAY TOWN the gulf is silting up, and is now resorted to only by small craft. The once famous harbours of Surat and Broach on its coast have ceased to be used by foreign commerce.

Cambay Town (*Khambāyat* or *Khambhāt*).—Capital of the State of Cambay, Bombay, situated in 22° 18′ N. and 72° 40′ E., at the head of the Gulf of Cambay, on the north of the estuary of the river Mahī, 52 miles south of Ahmadābād. Population (1901), 31,780:

namely, 21,975 Hindus, 6,584 Muhammadans, 3,063 Jains, 23 Christians, and 134 Pārsīs. The city was originally surrounded by a brick wall perforated for musketry, flanked with irregular towers without fosse or esplanade; but the works are now out of repair, and few of the guns mounted are serviceable. Only portions of the wall remain, enclosing a circumference of not more than 3 miles. The palace of the Nawāb is in good repair, but built in an inferior style of architecture. The Jāma Masjid was erected in 1325, in the time of Muhammad Shāh; the pillars in the interior were taken from desecrated Jain temples, and, though arranged without much attention to architectural effect, give a picturesque appearance. Many ruins still attest the former wealth of Cambay. It is mentioned, under the name of Cambaet, as a place of great trade by Marco Polo (*circ.* 1293), and by his countryman and contemporary Marino Sanudo, as one of the two great trading ports of India (Cambeth).

The commercial decline of this once flourishing mart is due in great measure to the silting-up of the gulf, and to the 'bore' or rushing tide in the north of the gulf and at the entrances of the Mahī and Sābarmatī rivers. High spring-tides rise and fall as much as 33 feet, and the tide runs at a velocity of from 6 to 7 knots an hour. In ordinary springs the rise and fall is 25 feet, and the current 4½ to 6 knots. Great damage is thus frequently caused to shipping, the more so as the average depth of the channel is only from 4 to 6 fathoms; and the hazard is greatly increased by the constantly shifting shoals, caused by the frequent inundation of the rivers.

Cambay is celebrated for the manufacture of agate, carnelian, and onyx ornaments. The carnelians come chiefly from mines in the vicinity of Ratanpur, in the State of Rājpīpla, Rewā Kāntha Agency. The preparation of the stones was thus described in 1821 by Mr. J. Willoughby, Assistant to the Resident at Baroda:—

> 'The Bhīls, who are the miners, commence their operations about September and leave off in April, when they commence burning the carnelians. The operation of burning is performed by digging a hole, one yard square, in which are placed earthen pots filled with the carnelians, which, to facilitate the process, have for some time previous been exposed to the sun. The bottoms of the pots are taken out, and a layer of about 6 or 7 inches of cow or goat-dung, strewed above and below them, is set on fire, which, when consumed, has rendered the stones ready for the Cambay merchants.'

The three principal colours of the carnelians are red, white, and yellow, the first of which is considered the most valuable.

The town is administered as a municipality, with an average income of about Rs. 7,000 (chiefly derived from octroi), which is augmented by a contribution from the State revenues. The public institutions

include an experimental weaving-school, two hospitals, a high school, and the Lord Reay public library.

Campbellpore (*Kāmilpur*).—Cantonment in the Attock *tahsīl*, and head-quarters of Attock District, Punjab, situated in 33° 46′ N. and 72° 22′ E., on the North-Western Railway, and connected by a rough, unmetalled road, 11 miles long, with the grand trunk road. Population (1901), 3,036. It takes its name from Kāmilpur, a small adjacent village. The garrison consists of a battery of field artillery, a company of garrison artillery, and an ammunition column. Campbellpore is also the head-quarters of a *silladār* camel corps. The income and expenditure of cantonment funds during the ten years ending 1902–3 averaged Rs. 5,300 and Rs. 5,200 respectively.

Canara, North.—District in the Southern Division, Bombay. *See* KANARA, NORTH.

Canara, South.—District in Madras. *See* KANARA, SOUTH.

Candahār.—Province and city in Afghānistān. *See* KANDAHĀR.

Cannanore.—Head-quarters of the Chirakkal *tāluk* of Malabar District, Madras, situated in 11° 52′ N. and 75° 22′ E., in a shallow bay of the Arabian Sea, 470 miles by rail from Madras city. Besides the usual public offices the town contains a branch of the Basel German Mission, with a mercantile establishment where various cotton fabrics are manufactured, and a Central jail with accommodation for 865 males and 31 females.

Cannanore was once the capital of the Kolattiri Rājā, the chief rival of the Zamorin, and became an important emporium of trade with Persia and Arabia during the twelfth and thirteenth centuries, from which time dates the rise of the family of the Alī Rājās, or Sea Kings, of Cannanore. Their origin is uncertain; but tradition assigns the foundation of the family to a Nāyar minister of the Kolattiri Rājā, who was converted to Islām about the beginning of the twelfth century. Towards the end of the century the family appears to have obtained the port and town of Old Cannanore as a grant from the Kolattiri Rājā. The Alī Rājā became his chief admiral and the head of the Cannanore Māppillas; and his power gradually increased till by the eighteenth century he was practically independent of his suzerain and was able to put 25,000 men in the field.

Cannanore was one of the earliest Portuguese settlements. In 1498 Vasco da Gama touched there, by invitation of the Kolattiri Rājā, on his way home from Calicut. Three years later Cabral founded a factory; and in 1502 Da Gama, on his second voyage to India, concluded a treaty with the Rājā and left 200 Portuguese in Cannanore. The factory continued to flourish, and in 1505 Almeyda was allowed to build a fort. In the next year he won a great naval victory in the Cannanore bay over the Zamorin and his Māppillas, which finally

established the Portuguese naval supremacy. The fort and factory continued in possession of the Portuguese till they were conquered by the Dutch in the middle of the seventeenth century. The Dutch held the fort till 1771, when they sold it to the Alī Rājā, whose power had considerably increased during Haidar Alī's first invasion. In 1783 the fort was taken by the British, as the Bībī of Cannanore had detained 250 British soldiers on their way to join the forces against Tipū; but in the next year the Bībī entered into a treaty with the British and the fort was restored to her. Finally, in 1790, owing to the unsatisfactory behaviour of the Bībī, who had throughout secretly favoured the Mysore Sultān, Cannanore was again besieged and the Bībi made an unconditional surrender. Cannanore then became the military head-quarters of the British on the west coast, and continued to be so till 1887, when the head-quarters was transferred to the Nīlgiris. A settlement was made in 1796 with the Bībī, who agreed to pay Rs. 15,000 per annum as the assessment on her houses, *parambas*, &c., in and near Cannanore, and on her trade and *janmam* property in the LACCADIVE ISLANDS. The settlement appears to have been similar to the temporary settlements for the collection of revenue made with the other Malabar Rājās, which were subsequently superseded by the *ryotwāri* system; but the settlement with the Bībī has continued in force till the present time.

Cannanore has lost a good deal of its importance as a trade centre. It now ranks fourth among the ports of Malabar, the value of its imports in 1903–4 being 25 lakhs and of its exports 15 lakhs. Pepper, salted fish, and cotton fabrics are the chief exports, and rice and cotton yarn the chief imports. It has also suffered from the decline of its importance as a military station, and the many untenanted bungalows are a melancholy reminder of departed prosperity. The south-west line of the Madras Railway is now being extended into South Kanara, via Cannanore. The population in 1901 was 27,811, including 11,711 Hindus, 12,893 Muhammadans, and 3,180 Christians. The town was made a municipality in 1870. The income during the decade ending 1900 averaged Rs. 29,000, and the expenditure Rs. 28,000. In 1903–4 they were Rs. 38,000 and Rs. 37,000 respectively, the chief income being from the taxes on houses and land.

Canning, Port (*Mātla*).—Village in the head-quarters subdivision of the District of the Twenty-four Parganas, Bengal, situated in 22° 19′ N. and 88° 39′ E., at the junction of the Bidyādharī and Mātla rivers. Population (1901), 1,049. Between 1853 and 1870 an attempt was made to create a port at Canning as an auxiliary to Calcutta, in consequence of the deterioration of the river Hooghly, which was then believed to be rapidly closing. Land was acquired by Government in 1853, and in 1862 a municipality was created, to which the land was

transferred. In 1865 the Port Canning Company was formed to develop the port. In that year it was visited by twenty-six ships, and for a time the company's shares rose at an unprecedented rate; but the number of ships visiting the port dropped to one vessel in 1868-9, and the failure of the scheme was then recognized. Litigation ensued, and in 1870 the company went into liquidation and was reconstructed as the 'Port Canning Land Company, Limited.' This company is under Pārsī management, the shares being held in Bombay, and is engaged in leasing reclamations in the Sundarbans. The lands held by it have been sub-leased; and the middlemen, who have again sublet them to others, reap most of the profits. Canning is now a Government estate, and the only relics of the wild speculation of the sixties are a railway which does a little traffic in timber and other produce from the Sundarbans, some ruined jetties, and the remains of a tramway line.

Caragola.—Village in Purnea District, Bengal. *See* KARĀGOLA.

Cardamom Hills.—Range of hills in Travancore State, Madras, lying between 9° 26′ and 10° 8′ N. and 76° 40′ and 77° 7′ E., south of the Anaimudi group. They form an elevated plateau at a height of 3,000 to 3,500 feet, with peaks and hills running up to 5,000 feet, and comprise the High Range in the north, the Cardamom Hills proper in the centre, and those of PĪRMED in the south. Area, about 1,000 square miles; population (1901), 21,589. Though not a distinct revenue division, they form a separate division for magisterial and certain other purposes, under the charge of a Superintendent and District magistrate assisted by a first-class magistrate located at Pīrmed. Cardamoms formed a State monopoly till 1896, when a system of land tax was introduced. The ryots now receive permanent occupancy rights, with the power to relinquish their holdings at will. They are mostly natives of neighbouring British Districts, and own no property in Travancore except these cardamom lands. In 1903-4 the area under cultivation was 13,698 acres, of which 12,579 acres paid the prescribed assessment of Rs. 6-4 per acre. Since the abolition of the monopoly, European capital has thrown itself largely into this enterprise. Viewed from the economic and industrial aspect, however, the chief value of the hills lies less in their eminent suitability for cardamom cultivation than in the fact that they are now the chief seat of the tea-planting industry. A large amount of British money has been invested in this industry, the capital of one company alone amounting to a million sterling. The High Range is the centre of the greatest activity, and is the largest and most compact tea district in Southern India. The hills are tapped by roads and bridle-paths, which connect them with the Cochin State and the sea on the west and with the British Districts on the east. The expenditure by the Travancore State on public works in this area in 1903-4 was Rs. 1,47,000. The

Cardamom Hills are provided with civil and criminal courts, police stations, post offices, hospitals, telegraphic and telephonic lines, schools, &c.

Carnatic (*Kannada, Karnāta, Karnātaka-desa*).—Properly, as the name implies, 'the Kanarese country.' The name has, however, been erroneously applied by modern European writers to the Tamil country of Madras, including the Telugu District of Nellore. The boundaries of the true Carnatic, or Karnātaka-desa, are given by Wilks as

'Commencing near the town of Bīdar, 18° 45′ N., about 60 miles north-west from Hyderābād (Deccan). Following the course of the Kanarese language to the south-east, it is found to be limited by a waving line which nearly touches Adoni, winds to the west of Gooty, skirts the town of Anantapur, and passing through Nandidroog, touches the range of the Eastern Ghāts; thence pursuing their southern course to the mountainous pass of Gazzalhati, it continues to follow the abrupt turn caused by the great chasm of the western hills between the towns of Coimbatore, Pollāchi, and Pālghāt; and, sweeping to the north-west, skirts the edges of the precipitous Western Ghāts, nearly as far north as the sources of the Kistna; whence following first an eastern and afterwards a north-eastern course, it terminates in rather an acute angle near Bidar, already described as its northern limit.'

This country has been ruled wholly or in part by many dynasties, of whom the Andhras or Sātavāhanas, the Kadambas, the Pallavas, the Gangas, the Chālukyas, the Rāshtrakūtas, the Cholas, the later Chālukyas, the Hoysalas, and the house of Vijayanagar are the most prominent. The Vijayanagar kings, who came into power about the year 1336, conquered the whole of the peninsula south of the Tungabhadra river. They were completely overthrown by the Muhammadans in 1565, and retired first to Penukonda, and then to Chandragiri, one branch of the family remaining at Anagundi opposite to their old capital. It was these conquests that probably led to the extension of the term 'Carnatic' to the southern plain country; and this latter region came to be called Karnāta Pāyānghāt, or 'lowlands,' to distinguish it from Karnāta Bālāghāt, or the 'hill country.' When the Muhammadan kings of the Deccan ousted the Vijayanagar dynasty, they divided the north of the Vijayanagar country between them into Carnatic Hyderābād (or Golconda) and Carnatic Bijāpur, each being further subdivided into Pāyānghāt and Bālāghāt. At this time, according to Wilks, the northern boundary of Karnāta (Carnatic) was the Tungabhadra.

Speaking of this period and the modern misapplication of the name, Bishop Caldwell says (*Grammar of the Dravidian Languages*, pp. 34–5):—

'The term *Karnāta* or *Karnātaka* is said to have been a generic term, including both the Telugu and Kanarese peoples and their

languages, though it is admitted that it usually denoted the latter alone, and though it is to the latter that the abbreviated form Kannadam has been appropriated. Karnātaka (that which belongs to Karnāta) is regarded as a Sanskrit word by native Pandits; but I agree with Dr. Gundert in preferring to derive it from the Dravidian words *kar*, "black," *nādu* (the adjective form of which in Telugu is *nāti*), "country," that is, "the black country," a term very suitable to designate the "black cotton soil," as it is called, of the plateau of the Southern Deccan. The use of the term is of considerable antiquity, as we find it in the *Varāha-Mihira* at the beginning of the fifth[1] century A.D. Tārānātha also mentions Karnāta. The word Karnāta or Karnātaka, though at first a generic term, became in process of time the appellation of the Kanarese people and of their language alone, to the entire exclusion of the Telugu. Karnātaka has now got into the hands of foreigners, who have given it a new and entirely erroneous application. When the Muhammadans arrived in Southern India, they found that part of it with which they first became acquainted—the country above the Ghāts, including Mysore and part of Telingāna—called the Karnātaka country. In course of time, by a misapplication of terms, they applied the same name Karnātak, or Carnatic, to designate the country below the Ghāts, as well as that which was above. The English have carried the misapplication a step farther, and restricted the name to the country below the Ghats, which never had any right to it whatever. Hence the Mysore country, which is probably the true Carnatic, is no longer called by that name; and what is now geographically termed "the Carnatic" is exclusively the country below the Ghāts on the Coromandel coast.'

It is this latter country which formed the dominions of the Nawābs of the Carnatic, who played such an important part in the struggle for supremacy between the English and the French in the eighteenth century, and which now forms the greater portion of the present Madras Presidency. This connotation still survives in the designation of Madras regiments as Carnatic infantry. Administratively, however, the term Carnatic (or Karnātak as it is there used) is now restricted to the Bombay portion of the original Karnāta: namely, the Districts of Belgaum, Dhārwār, and Bijāpur, and part of North Kanara, with the Native States of the Southern Marāthā Agency and Kolhāpur. *See* SOUTHERN MARĀTHĀ COUNTRY.

Car Nicobar.—The northernmost of the NICOBAR ISLANDS.

Cashmere.—Native State in Northern India. *See* KASHMĪR AND JAMMU.

Cassergode.—*Tāluk* of South Kanara District, Madras. *See* KĀSARAGOD.

Castle Rock.—Village in the Supa *petha* of the Haliyāl *tāluka* of North Kanara District, Bombay, situated in 15° 24′ N. and 74° 20′ E., on the Southern Mahratta Railway, 290 miles from Poona, and an

[1] *Recte* 'sixth.'

important frontier post. Population (1901), 117. The Goa frontier is 3 miles west of the railway station. There is a considerable trade with Portuguese possessions, the chief import being salt (value 10 lakhs yearly), and the chief exports grain and cotton for shipment at Marmagao (30 lakhs). Castle Rock has an elevation of 3,000 feet and commands many beautiful views. The chief object of interest in the vicinity is the Dudh-sāgar waterfall on the *ghāt* incline, a few miles beyond the Portuguese frontier. The village contains a dispensary belonging to the railway company.

Cauvery (*Kāveri*; the Χάβηρος of the Greek geographer Ptolemy).—A great river of Southern India, famous alike for its traditional sanctity, its picturesque scenery, and its utility for irrigation. Rising on the Brahmagiri, a hill in Coorg, high up amid the Western Ghāts (12° 25′ N. and 75° 34′ E.), it flows in a generally south-east direction across the plateau of Mysore, and finally pours itself into the Bay of Bengal in the Madras District of Tanjore. Total length, about 475 miles; estimated area of drainage basin, 28,000 square miles. It is known to devout Hindus as *Dakshina Gangā*, or the 'Ganges of the South,' and the whole of its course is holy ground. According to the legend preserved in the Agneya and Skanda Purānas, there was once born upon earth a girl named Vishnumāya or Lopāmudra, the daughter of Brahmā; but her divine father permitted her to be regarded as the child of a mortal called Kavera-muni. In order to obtain beatitude for her adoptive father, she resolved to become a river whose water should purify from all sin. Hence it is that even the holy Gangā resorts underground, once in the year, to the source of the Cauvery, to purge herself from the pollution contracted from the crowd of sinners who have bathed in her waters. At Tala Kāveri, where the river rises, and at Bhāgamandala, where it receives its first tributary, stand ancient temples frequented annually by crowds of pilgrims in the month of Tulāmāsa (October–November).

The course of the Cauvery in Coorg is tortuous; its bed is rocky; its banks are high and covered with luxuriant vegetation. In the dry season it is fordable almost anywhere, but during the rains it swells into a torrent 20 or 30 feet deep. In this portion of its course it is joined by many tributaries—the Kakkabe, Kadanūr, Kumma-hole, Muttāramudi, Chikka-hole, and Survarnāvati, or Hāringi. Near the frontier, at the station of Fraserpet, it is spanned by a magnificent stone bridge, 516 feet in length. Soon after entering Mysore State, the Cauvery passes through a narrow gorge, with a fall of 60 to 80 feet in the rapids of Chunchan-Katte. After this it widens to an average breadth of from 300 to 400 yards till it receives the Kabbani, from which point it swells to a much broader stream. Its bed continues rocky, so as to forbid all navigation, but its banks are bordered with a rich belt of 'wet' cultiva-

tion. In its course through Mysore the river is interrupted by no less than twelve anicuts (dams) for the purpose of irrigation. Including irrigation from the tributaries, the total length of channels on the Cauvery system in Mysore in 1904-5 was 968 miles, the area irrigated 112,000 acres, and the revenue obtained nearly 7 lakhs. The finest channel is 72 miles long, and two others each run to 41 miles. The construction of three of the principal dams is attributed to the Mysore king, Chikka Deva Rājā (1672-1704).

In Mysore the river forms the two islands of SERINGAPATAM and SIVASAMUDRAM, about 50 miles apart, which vie in sanctity with the island of Srīrangam lower down in Trichinopoly District. Both islands are approached from the north by interesting bridges of native construction, composed of hewn-stone pillars founded on the rocky bed of the stream, and connected by stone girders. The one at Seringapatam, about 1,400 feet long, named the Wellesley Bridge, after the Governor-General, was erected between 1803 and 1804 by the famous Dīwān Pūrnaiya. That at Sivasamudram, 1,580 feet long, and called, after a Governor of Madras, the Lushington Bridge, was erected between 1830 and 1832 by a private individual, who also bridged the other arm in the same way and was honoured with suitable rewards. The river is moreover bridged at Seringapatam for the Mysore State Railway, and at Yedatore. The first fresh in the river generally occurs about the middle of June. In August the flow of water begins to decrease, but the river is not generally fordable till the end of October.

Enclosing the island of Sivasamudram are the celebrated Falls of the Cauvery, unrivalled for romantic beauty. The river, here running north-east, branches into two channels, each of which makes a descent of 320 feet in a succession of rapids and broken cascades. The western fall is known as the Gagana Chukki ('sky spray'), and the eastern as the Bhar Chukki ('heavy spray'). The former, which is itself split by a small island, dashes with deafening roar over vast boulders of rock in a cloud of foam, the column of vapour rising from it being visible at times for miles. The eastern fall is quieter, and in the rainy season pours over the hill-side in an unbroken sheet a quarter of a mile broad. At other times the principal stream falls down a deep recess in the form of a horseshoe, and then rushes through a narrow channel, again falling about 30 feet into a large basin at the foot of the precipice. This waterfall is said to resemble the Horseshoe Fall of Niagara. The parted streams unite again on the north-east of the island and hurry on through wild and narrow gorges, one point being called the Mekedātu or 'goat's leap.'

The Cauvery has now been harnessed at Sivasamudram, the western fall being utilized for generating electricity to drive the machinery at the KOLĀR GOLD FIELDS, 92 miles distant, and to supply electric lighting for

the city and power for a mill at Bangalore, 59 miles away. The installation, delivering 4,000 h.p. at the mines, has been in successful operation since the middle of 1902, and was increased by 2,500 h.p. in 1905. It was the first of its kind in India, and at the time of its inception one of the longest lines of electric transmission in the world.

The principal towns on the river in Mysore are Yedatore, Seringapatam, and Talakād, the last named being an old capital, now almost buried under sand-dunes. Crocodiles are numerous; but they have seldom been known to attack fishermen, and the natives in general stand in no dread of them. Shoals of large fish, which are held sacred, are fed daily by the Brāhmans at Rāmnāthpur and Yedatore. The Mysore tributaries of the Cauvery are, on the north, the HEMĀVATI, Lokapāvani, Shimsha, and ARKĀVATI; on the south, the LAKSHMANTĪRTHA, KABBANI, and Suvarnāvati or HONNU-HOLE.

The Cauvery enters the Presidency of Madras at the Falls of Sivasamudram, and forms the boundary between the Districts of Coimbatore and Salem for a considerable distance, until it strikes into Trichinopoly. In this part of its course, near Alambādi in Coimbatore, there is a remarkable rock in the middle of the stream which throws up a column of perpetual spray, though the water round it is to all appearances quite unbroken. It is called the 'smoking rock,' and the natives declare that the spray is due to the river pouring into an enormous chasm in its bed. Close under the historic Rock of Trichinopoly the Cauvery breaks at the island of Srīrangam into two channels (crossed by masonry road bridges), which irrigate the delta of Tanjore, the garden of Southern India. The more northerly of these channels is called the COLEROON (Kollidam); that which continues the course of the river towards the east preserves the name of the Cauvery. On the seaward face of the delta are the open roadsteads of Tranquebar, Negapatam, and French Kārikāl. In Madras the chief tributaries of the Cauvery are the BHAVĀNI, Noyil, and Amarāvati. At Erode the river is crossed by the south-west line of the Madras Railway, by means of an iron girder-bridge, 1,536 feet long with 22 spans, on piers sunk into the solid rock.

The only navigation which exists on the Cauvery is carried on in coracles of basket-work, but the Coleroon is navigable for a few miles above its mouth by vessels of 4 tons burden.

Although the water of the Cauvery is utilized to a considerable extent for agriculture in Mysore, and also in Coimbatore and Trichinopoly Districts, it is in its delta that its value for irrigation becomes most conspicuous. At Srīrangam, just above the point where it bifurcates to form the Coleroon, the flood discharge is estimated at 313,000 cubic feet per second. The problem of utilizing this storehouse of agri-

cultural wealth was first grappled with about the eleventh century by one of the Chola kings, who constructed a massive dam of unhewn stone, 1,080 feet long and from 40 to 60 feet broad, below the island of Srīrangam, to keep the Cauvery separate from the Coleroon and drive it towards Tanjore District. This is still in existence and is known as the 'Grand Anicut.' It has been improved by British engineers and a road bridge has been built upon it. Below it the kings of the same dynasty cut several of the chief canals of the delta, some of which still bear their names, and the Cauvery irrigation is thus less entirely due to the British Government than that in the GODĀVARI and KISTNA deltas. When the British first came into possession of Tanjore District, in 1801, it was found that the great volume of the water-supply was then passing down the Coleroon, which runs in a straighter course and at a lower level than the Cauvery, while the Cauvery proper was gradually silting up, and the irrigating channels that took off from it were becoming dry. The object of the engineering works that have been since constructed is to redress this unequal tendency, and to compel either channel to carry the maximum of water that can be put to good use. The first of these was the 'Upper Anicut' across the head of the Coleroon at the upper end of Srīrangam Island, constructed by Sir Arthur Cotton between 1836 and 1838. This is 2,250 feet long, broken by islands into three sections, and was designed to increase the supply in the Cauvery. It was followed in 1845 by a regulating dam, 1,950 feet long, across the Cauvery near the Grand Anicut, to prevent too much water flowing down this latter stream. Close to it a similar regulator was constructed in 1848 across the Vennār, one of the main branches of the Cauvery. From this point the Cauvery runs north-east and the Vennār south-east, both of them throwing off branch after branch, which in their turn split up into innumerable channels and form a vast network which irrigates the delta. At the off-take of all the more considerable of these, head-works have been constructed to control and regulate the flow. The Cauvery itself eventually enters the sea by an extremely insignificant channel. From the Lower Anicut across that stream the Coleroon irrigates land in South Arcot as well as in Tanjore. In the three Districts of Tanjore, Trichinopoly, and South Arcot the two rivers water 1,107,000 acres, yielding a revenue of 41 lakhs. The capital cost of the works of improvement and extension in the delta has been 28 lakhs, and the net revenue from them is 8½ lakhs, representing a return of nearly 31 per cent. on the outlay.

Cawnpore District (*Kānpur*).—Northern District of the Allahābād Division, United Provinces, lying between 25° 56′ and 26° 58′ N. and 79° 31′ and 80° 34′ E., with an area of 2,384 square miles. It is bounded on the north-east by the Ganges, which divides it from the Oudh Districts of Hardoī and Unao; on the north-west by Farrukhābād

and Etāwah; on the south-west by the Jumna, which separates it from Jālaun and Hamīrpur; and on the south-east by Fatehpur. Cawnpore forms part of the DOĀB, or great alluvial plain between the Ganges and the Jumna; and it does not materially differ in its general features from other portions of that vast tract. It consists for the most part of a level plain, varied only by the courses of the minor streams whose waters eventually swell the great boundary rivers. There is a general slope towards the south-west, and all the river channels trend in that direction. The Isan cuts off a small angle to the north, joining the Ganges shortly after its entry within the limits of Cawnpore; next come the Pāndū and Rind or Arind, which traverse the central portion of the District from end to end; while the Sengar, after a south-westerly course through part of the District, turns south abruptly and falls into the Jumna. The banks of both the Sengar and the Jumna are deeply furrowed by extensive ravines, which ramify in every direction from the central gorge. Their desolate appearance contrasts strongly with the rich and peaceful aspect of the cultivated country above. The Ganges and Jumna are navigable throughout their course, but water-borne traffic has decreased. Although no lakes of any size exist, there are several *jhīls* or swamps, especially in the northern and central portions; and in the south-west a long drainage line, called the Sonās, gradually deepens into a regular watercourse.

Physical aspects.

The District consists entirely of Gangetic alluvium; but *kankar* is found in all parts, and large stretches of country, especially in the Ganges-Pāndū *doāb*, are covered with saline efflorescences.

The flora of the District presents no peculiarities. The only extensive jungles are of *dhāk* (*Butea frondosa*). Groves of mangoes cover a larger area; and *mahuā* (*Bassia latifolia*), *jāmun* (*Eugenia Jambolana*), *nīm* (*Melia Azadirachta*), and *babūl* (*Acacia arabica*) are the commonest trees.

Leopards are found near the confluence of the Sengar and Jumna, the ravine deer along the Jumna, and antelope and *nīlgai* in small and decreasing numbers throughout the District. Wild hog are common near both the great rivers, and wolves along the bank of the Ganges are sometimes dangerous to human life. Partridges, quail, and hares are common; and geese, duck, teal, and other aquatic birds haunt the marshes in the cold season. Fish are plentiful, and are freely used for food.

The climate is hot and dry. From April to July westerly winds prevail; the rainy season lasts till the end of September or beginning of October, and the cold season begins in November. The District is, on the whole, well drained, and is therefore fairly healthy.

The rainfall over a long series of years averages 33 inches, evenly

distributed throughout the District. From time to time there are considerable variations in the fall, which greatly affect agricultural conditions. In 1894 the amount was as much as 59 inches, and in 1897 only 19 inches.

History.

The early history of the District is unusually meagre, owing to the fact that it contained no town of importance, and was divided between kingdoms or provinces whose capitals were situated beyond its limits. Thus in the reign of Akbar it was divided between the *sarkārs* of KANAUJ, KĀLPĪ, and KORĀ. On the fall of the Mughal empire the District fell into the possession of the Bangash Nawāb of FARRUKHĀBĀD and remained in his power from 1738 to 1754, when the Marāthās occupied the Lower Doāb. After the great battle of Pānīpat the Farrukhābād Nawāb again acquired part of the District, and gave some help to Shujā-ud-daula in his second attempt against the English, which ended in the victory of the latter near Jājmau in 1765. The result of that event was the restoration to the emperor Shāh Alam II of a tract south of the Ganges, including part of this District. A few years later the Marāthās again advanced, and the emperor joined them. The Oudh forces were successful in driving the Marāthās out of the Doāb, and in 1773 the territory granted to the emperor was assigned to the Nawāb of Oudh. About 1778 a British cantonment was founded at Cawnpore, and in 1801 the whole District was ceded with other territory. The later history is uneventful till the date of the Mutiny of 1857. The events of that terrible summer are described in detail in the article on CAWNPORE CITY.

The revolt commenced on June 6, when the sepoys seized the treasury, broke open the jail, and burnt the public offices. For three weeks the small European garrison held out in entrenchments, hastily prepared in the middle of an open plain. On June 26 they capitulated on a sworn promise of protection, which was broken almost as soon as made. As the survivors of the siege were embarking in boats for Allahābād, fire was suddenly opened by men in ambush. With hardly an exception, the men were shot down on the spot and the women were carried off to prison, where they were afterwards all cut to pieces under the orders of the Nāna, at the first sound of Havelock's guns outside Cawnpore. General Havelock had fought the battles of Aung and the Pāndū Nadī on the 15th of July, and next day took Cawnpore by storm. The 17th and 18th were devoted to the recovery of the city, and the 19th to the destruction of Bithūr and the Nāna's palaces. Two or three unsuccessful attempts to cross into Oudh were hazarded; but no actual advance was made until the arrival of reinforcements under General Outram towards the end of August. Sir Colin Campbell's column passed through to the relief of Lucknow on October 19, and Colonel Greathed followed a week later. In November the Gwalior mutineers crossed the

Jumna, and, being joined by a large force of Oudh rebels, attacked Cawnpore on the 27th, and obtained possession of the city, which they held till Sir Colin Campbell marched in the next evening. On December 6 he routed them with great loss, and took all their guns. General Walpole then led a column through the country, restoring order in Akbarpur, Rasūlābād, and Derāpur. The District was not completely pacified till after the fall of Kālpī in May, 1858. But that event rendered its reorganization easy; and when Fīroz Shāh fled through it in December, 1858, his passage caused no disturbance.

Some interesting copper arrow-heads and hatchets have been found near Bithūr. Along the course of the Rind stands a series of Hindu temples, mostly of small size, dating from the sixth to the ninth century.

Population.

There are 6 towns and 1,962 villages in the District. In spite of adverse seasons population is increasing steadily. The numbers at the last four enumerations were as follows: (1872) 1,156,055, (1881) 1,181,396, (1891) 1,209,695, and (1901) 1,258,868. Cawnpore contains eight *tahsīls*—AKBARPUR, BILHAUR, BHOGNĪPUR (or Pukhrāyān), CAWNPORE, DERĀPUR, NARWAL (or Sārh Salempur), SHIVARĀJPUR, and GHĀTAMPUR—the head-quarters of each being at a place of the same name. The only large town is CAWNPORE CITY, the administrative head-quarters of the District. The following table gives the chief statistics of population in 1901:—

Tahsīl.	Area in square miles.	Number of		Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
		Towns.	Villages.				
Akbarpur	245	1	199	107,729	440	+ 5·3	2,760
Bilhaur	345	1	245	156,261	453	− 0·8	4,272
Bhognīpur	368	1	308	141,346	384	+ 17·0	2,788
Cawnpore	283	2	221	338,507	1,196	+ 4·3	25,052
Derāpur	308	...	275	149,593	486	+ 6·8	4,073
Narwal	218	1	170	92,860	426	− 6·0	3,366
Shivarājpur	276	...	311	147,910	536	+ 0·1	4,703
Ghātampur	341	...	233	124,662	366	+ 5·8	3,894
District total	2,384	6	1,962	1,258,868	528	+ 4·1	50,908

Hindus form more than 90 per cent. of the population, and Musalmāns 9 per cent. The density of population is generally lower than in the rich Districts farther west. In spite of distress caused by the famine of 1896–7, population increased between 1891 and 1901 at a higher rate than the Provincial average. More than 99 per cent. of the population speak Western Hindī, the prevailing dialect being Kanaujiā.

The most numerous Hindu castes are: Brāhmans, 172,000; Chamārs (leather-workers and cultivators), 154,000; Ahīrs (graziers and cultiva-

tors), 122,000; Rājputs, 95,000; Lodhas (cultivators), 47,000; Kurmīs (agriculturists), 45,000; and Korīs (weavers), 51,000. The Boriyās or Bauriās, who number 15,000, are akin to the Pāsīs, and are not found elsewhere. Among Musalmāns the chief groups are: Shaikhs, 53,000; Pathāns, 18,000; and Saiyids, 7,000. Agriculture supports 62 per cent. of the population, general labour more than 8 per cent., and personal services nearly the same proportion. Rājputs, Brāhmans, and Kurmīs are the principal holders of land; Brāhmans, Ahīrs, Rājputs, Chamārs, Kāchhīs, and Kurmīs are the chief cultivators.

In 1901 there were 1,456 native Christians, of whom 547 belonged to the Anglican communion, 330 were Methodists, 50 Presbyterians, and 104 Roman Catholics. The Society for the Propagation of the Gospel has laboured here since 1833, and the American Methodist Mission was opened in 1871.

Agriculture.

Broadly speaking, there are two main agricultural divisions in the District. In the southern portion the Jumna and Sengar have an extensive system of ravines with small areas of lowland; the upland away from the ravines is mainly loam, but is not very fertile, and bears some resemblance to the neighbouring tract of Bundelkhand south of the Jumna. A striking feature of this tract is the great depth of the spring-level, making the cost of irrigation from wells almost prohibitive. The northern half of the District consists mainly of good fertile loam, with some heavy rice soil and large *ūsar* plains, particularly in the north and north-west. Along the Pāndū and Rind are found stretches of lighter loam with a distinctive red colour. In the extreme north a strip of very light soil or *bhūr* is found near the Isan. The Ganges has very little alluvial land, as in most parts of its course it flows close under the high bank.

The tenures found are those common to the United Provinces. In the whole District, 4,336 *mahāls* are held *zamīndāri*, 957 *pattīdāri*, and 20 *bhaiyāchārā*. The main agricultural statistics for 1903-4 are given below, in square miles:—

Tahsīl.	Total.	Cultivated.	Irrigated.	Cultivable waste.
Akbarpur	245	131	66	27
Bilhaur	345	163	76	39
Bhognīpur	368	225	67	34
Cawnpore	283	141	60	24
Derāpur	308	186	78	33
Narwal	218	116	45	22
Shivarājpur	276	145	80	21
Ghātampur	341	216	62	49
Total	2,384	1,323	534	249

The principal food-crops, with the area under each in square miles,

were: gram (263), *jowār* (230), barley (254), and wheat (230). Maize, rice, and *bājra* are also important. Of the non-food crops, cotton covered an area of 82 square miles, sugar-cane 12, indigo 20, and poppy 10.

The area under cultivation has not increased during the last thirty years, nor is there much room for expansion. Important changes have, however, taken place in the crops sown. These changes have been in the direction of increasing the area under the food-crops of the poorer classes, such as *jowār*, rice, maize, and minor products, all of which are grown in the autumn. The spring crops, especially mixed wheat and barley, and mixed gram and peas, have decreased in area, as have the valuable autumn crops, cotton and sugar-cane. A substantial increase has, however, been effected in the area double cropped; and poppy and potatoes, which are valuable crops, though covering a small area, are being more largely grown. Canal-irrigation has also been extended to two important tracts in the south-west and north-east of the District. A steady demand exists for advances under both the Land Improvement and the Agriculturists' Loans Acts. During the ten years ending 1901 the total advances were 1·7 lakhs, of which Rs. 75,000 was advanced in the famine year 1896-7. In normal years the loans amount to Rs. 3,000 or Rs. 4,000.

The District has no particular breed of cattle, goats, or sheep, and the best animals are all imported, the MAKANPUR fair being the great source of supply. Horse-breeding is not carried on in any part, and the ponies ordinarily bred are very inferior.

Cawnpore is largely dependent on canals. In 1903-4, out of 534 square miles irrigated, canals supplied 362, wells 140, and tanks 29. Three main branches of the LOWER GANGES CANAL supply the District: namely, the Cawnpore branch, the Etāwah branch, and the Bhognīpur branch. The first of these is now continued through the east of Cawnpore, under the name of the Fatehpur branch. Unbricked wells can be made in all parts of the District, except in the tract near the Jumna, and often last for many years, with annual repairs and cleaning. Water is raised in a leathern bucket by a rope drawn by bullocks.

The only mineral products of the District are *kankar* or nodular and block limestone, and the saline efflorescence called *reh*.

Trade and communications.

CAWNPORE CITY is the most important manufacturing centre in the United Provinces. Cotton-spinning and weaving and tanning and the manufacture of leathern goods are the chief industries carried on; but ironwork, woollen goods, sugar, and several other classes of articles are also manufactured. The twenty-five largest factories gave employment in 1903 to nearly 17,000 hands. Outside the city there are few manufactures, and these are confined to the preparation of the articles required for local use.

The trade of the District largely centres in Cawnpore city, which not only takes the lead in industrial enterprise, but is also the greatest commercial mart in Upper India. Articles manufactured here are exported to all parts of the country, and several classes of goods are sent abroad. Grain and pulses, oilseeds, and sugar are exported; while raw cotton, salt and saltpetre, metals, and piece-goods are imported for distribution to the surrounding Districts. The traffic is largely carried on the railway; but grain and cotton are also brought into Cawnpore by road and by the Lower Ganges Canal.

Cawnpore city is an important railway junction. The oldest line is the East Indian Railway, passing across the District from east to west. Through communication with Bombay is supplied by the Indian Midland branch of the Great Indian Peninsula Railway, while a branch of the Oudh and Rohilkhand Railway runs to Lucknow. The Cawnpore-Achhnerā metre-gauge line traverses a rich tract in the Agra Division, and is connected with the Bengal and North-Western Railway. The District is well supplied with means of communication, being the centre of a system of metalled roads, radiating in all directions with a total length of 205 miles, maintained by the Public Works department, 148 miles being repaired at the cost of Provincial revenues. There are also 798 miles of unmetalled roads in charge of the District board. Avenues of trees are kept up on 567 miles. The main routes are the grand trunk road, and the roads from Cawnpore city to Jhānsi and Saugor, and to Hamīrpur.

Famine.

Cawnpore is not liable to such severe famine as are the Districts situated to the west and south, but contains several tracts in which distress is caused by drought. The terrible famine of 1770 extended to this District, and in 1783-4 people and cattle died by thousands. Distress was felt in 1803-4, and the famine of 1837 visited Cawnpore with frightful severity. Cattle died by herds, and whole villages were depopulated. In 1860-1 some distress was felt; but the extension of canal-irrigation has been very effective to prevent famine; and in 1868-9 and 1877-8 there was little damage. In 1896-7 distress was severely felt in the parts not protected by canals, and was, as usual, aggravated by the inrush of starving people from Bundelkhand. In February, 1897, 139,600 persons were in receipt of relief, and more than 4 lakhs was spent on relief works. Large advances were made for seed, bullocks, and wells, and the District recovered rapidly.

Administration.

The District officer is usually assisted by two members of the Indian Civil Service, and by four Deputy-Collectors recruited in India. A *tahsīldār* resides at the head-quarters of each *tahsīl*, and two Executive Engineers in charge of divisions of the Lower Ganges Canal are stationed at Cawnpore city.

There are two District Munsifs. The Subordinate Judge and District Judge have civil jurisdiction throughout Cawnpore and Fatehpur Districts, and the latter is also Sessions Judge for both Districts, but only hears appellate criminal cases from Fatehpur. The District is not specially notable for crime. In 1900 a serious riot attended by loss of life took place in the city, and extra police were quartered on it for time. Female infanticide was formerly suspected; but the last names were removed from the register of persons under surveillance in 1903.

Cawnpore was acquired in 1801, and when first formed included parts of the present Districts of Farrukhābād and Fatehpur. The administrator under the Nawāb of Oudh before cession had been the celebrated eunuch, Almās Alī Khān, whose method was that of assessing revenue at the highest figure which could be collected. Under British rule short-term settlements were made at first, based on the nominal demand under native rule. This demand was excessive over a series of years, and great scandals arose. The native officials were corrupt and the English officers ignorant or supine; and estates were brought to sale, and purchased for a song, without their owners knowing that they were in arrears. In 1821 a special commission was appointed, with power to inquire into and set aside such sales. The commission annulled 185 auction sales, and a few private sales and mortgages. In 1840 the first regular settlement under Regulation IX of 1833 was carried out. The revenue demand was reduced from 23·2 to 21·8 lakhs, and this was further reduced by Rs. 30,000, as the assessment was found to be too high. There were at that time two large *talukas* in the District, which, in accordance with the usual policy, were broken up and settled with the village proprietors. The next regular settlement was made between 1868 and 1877, in the usual method. Each village was divided into blocks of similar qualities of soil, and rates were selected for the valuation of these. The result was an assessment of 21·6 lakhs. In 1903 a new settlement was commenced; but procedure has been simplified, as the *patwāris'* records were proved to be reliable, and where the existing demand is found to lie between 45 and 55 per cent. of the recorded 'assets,' no change is ordinarily being made.

Collections on account of land revenue and total revenue have been, in thousands of rupees :—

	1880-1.	1890-1.	1900-1.	1903-4.
Land revenue .	21,49	21,56	21,32	21,07
Total revenue .	39,03	33,90	38,24	40,39

There is only one municipality, CAWNPORE CITY; but five towns are administered under Act XX of 1856. The District board, which is in

charge of local affairs beyond the limits of these towns, had an income of 1·5 lakhs in 1903–4, chiefly derived from rates. The expenditure included Rs. 60,000 spent on roads and buildings.

There are 28 police stations; and the District Superintendent of police usually has 2 Assistants, and a force of 6 inspectors, 133 subordinate officers, and 621 constables, in addition to 195 municipal and town police, and 2,882 rural and road police. The District jail contained a daily average of 397 prisoners in 1903.

Cawnpore takes a fairly high place as regards the literacy of its population, and 4 per cent. (7 males and 0·4 females) could read and write in 1901. This is largely owing to the presence of a great city. The number of public institutions rose from 234 with 7,028 pupils in 1880–1 to 271 with 11,177 pupils in 1900–1. In 1903–4 there were 263 public institutions with 12,580 pupils, of whom 529 were girls; besides 265 private schools with 3,406 pupils, including 131 girls. More than 14,000 of the total number of pupils were in primary classes. Three of the public schools were managed by Government and 162 by the District and Municipal boards. The total expenditure on education was 1·1 lakhs, of which Rs. 34,000 was met from subscriptions and other sources, Rs. 44,000 from Local funds, Rs. 21,000 from fees, and Rs. 15,000 from Provincial revenues. The only college in the District is at Cawnpore city.

There are 18 hospitals and dispensaries, providing accommodation for 153 in-patients. In 1903 the number of cases treated was 107,000, including 1,600 in-patients, and 5,400 operations were performed. The total expenditure was Rs. 28,000, chiefly met from Local funds.

About 33,000 persons were successfully vaccinated in 1903–4, representing a proportion of 26 per 1,000 of the population, which is rather a low figure. Vaccination is compulsory only in the municipality and cantonment.

[F. N. Wright, *Settlement Report*, 1878; *District Gazetteer*, 1881 (under revision).]

Cawnpore Tahsīl.—Head-quarters *tahsīl* of Cawnpore District, United Provinces, conterminous with the *pargana* of the same name, formerly known as Jājmau. It lies along the Ganges, between 26° 15′ and 26° 41′ N. and 80° 2′ and 80° 26′ E., with an area of 283 square miles. Population increased from 324,628 in 1891 to 338,507 in 1901. There are 221 villages and two towns: CAWNPORE CITY (population, 197,170), the District and *tahsīl* head-quarters, and BITHŪR (7,173). The demand for land revenue in 1903–4 was Rs. 2,56,000, and for cesses Rs. 41,000. The density of population, 1,196 persons per square mile, is more than double the District average, owing to the inclusion of the city. The Pāndū and Rind are the chief rivers, besides the Ganges. There is a high cliff of barren soil along the Ganges, pierced

by ravines; but south of this the soil improves and is a fertile loam, which gradually assumes a reddish colour south of the Pāndū. In 1903–4 the area under cultivation was 141 square miles, of which 60 were irrigated. The Cawnpore and Fatehpur branches of the Lower Ganges Canal supply about two-fifths of the irrigated area, and wells most of the remainder.

Cawnpore City.—Head-quarters of the District of the same name, United Provinces, situated in 26° 28′ N. and 80° 21′ E., on the right bank of the Ganges, 120 miles above its junction with the Jumna at Allahābād; distance by rail to Howrah (Calcutta) 684 miles, and to Bombay 839 miles. The city is the third largest in the United Provinces and is increasing rapidly. The numbers at the four enumerations were as follows: (1872) 122,770, (1881) 151,444, (1891) 188,714, and (1901) 197,170, including cantonments (24,496).

Description.

History.

In the eighteenth century it was a mere village known as Kanhaiyāpur or Kānhpur, of which the present name is a corrupted spelling. Following the British victories in 1764–5 at Buxar and Jājmau, a treaty was made at Fyzābād in 1773 with the Nawāb Wazīr of Oudh, Shujā-ud-daula, who allowed the British to occupy two stations in his territories with troops. The places first selected were Fatehgarh and a site in Hardoī District; but in 1778 the troops were moved from the latter place to Cawnpore, and in 1801 the District with others was ceded by the Nawāb. Like Calcutta, the city, which is now the most important trade centre in Upper India, owes everything to British influence. The population in 1901 included 144,123 Hindus, 46,949 Musalmāns, and about 4,000 Christians, of whom nearly 3,000 were Europeans or Eurasians. The civil lines and cantonments stretch for several miles along the river bank, separating it from the native quarter. The latter is of mean appearance, and consists of a maze of narrow winding streets.

In 1857 Cawnpore was the scene of several of the most terrible episodes of the Mutiny. The native garrison included a company of artillery, a regiment of cavalry, and three regiments of infantry, while there were only 200 British troops. Inflammatory rumours had already spread before the outbreak at Meerut on May 9, and the news of that disturbance increased them. On May 20 General Wheeler telegraphed to Lucknow for reinforcements; but Sir Henry Lawrence could spare only fifty men. The General then appealed to Dundu Pant, adopted son of the last Peshwā, who was living at Bithūr, twelve miles away, and who had a grievance against the British Government, owing to their refusal to recognize his succession to the late Peshwā's pension and title. Dundu Pant, more familiarly known as the Nāna Sāhib, brought in 300 horse and foot with two guns. Before the end of May an entrenchment was prepared, consisting of a shallow trench and

miserable parapet 4 or 5 feet high, surrounding two long single-storeyed barracks, the whole enclosure[1] being but 200 yards square. On June 2 the fifty men who had come from Lucknow were sent back with fifty more of the Cawnpore garrison. During the night of June 4 the outbreak began with the departure of the cavalry regiment, followed by the 1st Infantry, and the next day by the other two regiments. In no case were the European officers injured, and a few men from all the regiments, mostly native officers, joined the English in their entrenchments. The sepoys, after plundering the treasury and houses in the civil station and opening the jail, had started for Delhi; but on June 6 the Nāna, who had thrown off his too successful pretence of friendship, persuaded them to return. The European entrenchment contained between 750 and 1,000 persons, of whom 400 were men able to bear arms. On June 7 the besiegers, who were subsequently reinforced and had as many as twelve guns, opened their attack in earnest; but in spite of three general assaults on June 12, 18, and 23, failing stores, and difficulty in obtaining water, the defenders still held out. The Nāna then decided to have recourse to stratagem. He promised that our forces should be allowed to march out with arms, that carriages should be provided for those who could not march and for the women and children, and that boats properly victualled should be ready at the Satī Chaurā *ghāt* to convey everybody to Allahābād. On the other hand, the entrenchments, treasure, and artillery were to be given up. Early on June 26 the evacuation began. Though every detail of the coming massacre had been carefully prepared and the fatal *ghāt* was surrounded by armed men and guns, the mutineers could not restrain themselves, and victims began to fall before they had entered the ambuscade. The majority were, however, allowed to embark, when a bugle sounded just as the boats were ready to start. For twenty minutes grape and bullets hailed on the boats, and only then did the enemy venture to come to close quarters. Every man caught was killed, and the women and children were taken to the Savāda Kothī, where their number were shortly increased by the inmates of a boat which had got away, but was subsequently captured. In the meantime, Havelock had been advancing up the grand trunk road, and he defeated the Nāna's brother and entered Cawnpore District on July 15. The same night five men armed with swords entered the Bībīghar, to which the women and children had been removed, and hacked and slashed till all were left for dead. Next morning the bodies of the dead and a few children who had survived were thrown into a well in the compound. The well is now surrounded by a stone screen, and over it is a pedestal on which stands a marble figure of an angel by Marochetti. A large area round it was enclosed at the expense of the town, and

[1] A Memorial Church now stands near the site of the entrenchment.

is called the Memorial Garden. Cawnpore was occupied by Havelock on July 17, and was held till the end of November, when the mutineers of the Gwalior Contingent got possession of it for ten days. It was recovered on December 6 by Sir Colin Campbell on his return from Lucknow.

Since the Mutiny the most serious event has been the riot of April, 1900. Two or three cases of plague had occurred, and several patients had been segregated. A mob of the lowest classes, led by ringleaders in better circumstances, attacked the plague huts and murdered six policemen and a *tahsīl chaprāsī*. There is reason to believe that some of these were thrown alive into the burning thatch. The rioters then proceeded to the parade-ground, and were dispersed by troops who fired on them. Seven of the ringleaders were hanged, and a punitive force of police was quartered in the city for a year.

Administration.

Cawnpore has been a municipality since 1861. During the ten years ending 1901 the income averaged 5·6 lakhs, and the expenditure 5·5 lakhs; but the income includes loans from Government, amounting to 14½ lakhs in the decade. Owing to its position as a trading centre, octroi was not levied here for many years, the chief receipts being derived from a licence tax on trades and professions, and from the rents of escheated lands within the municipality, which are under the management of the municipal board. In 1892 octroi was introduced, but two years later it was replaced by a terminal tax on both imports and exports, which now produces about half the total receipts. In 1903–4, out of a total income of 5·3 lakhs (excluding a loan of 10 lakhs), the principal receipts were: terminal tax (1·9 lakhs), tax on professions and trades (Rs. 60,000), house tax (Rs. 59,000), and rents (Rs. 35,000). The expenditure of 11·3 lakhs included general administration (Rs. 19,000), collection of taxes (Rs. 22,000), public works (Rs. 91,000), conservancy (1·4 lakhs), repayment of loans with interest (3·9 lakhs), besides capital expenditure (2·3 lakhs), and plague charges (Rs. 17,000).

A system of water-works was completed in 1894 at a cost of 14½ lakhs, and the annual charges for maintenance amount to about Rs. 68,000, while the income from sale of water is Rs. 27,000. The works supply the whole city with drinking-water drawn from the Ganges and filtered before distribution; standposts are situated in all parts for public use, and the daily supply amounts to about 10 gallons per head, about one-seventh being taken by a few of the large mills. A drainage scheme, which was much needed, is now being carried out, and the house tax was specially imposed to meet the extra charges that will be necessary. The main sewers are complete, and the branches are nearly finished. The initial cost of the scheme was met from a loan raised in the open market, for the first time in the United Provinces. Refuse is

removed from the city by a steam tramway, the only one of its kind in the Provinces, and incinerators have been erected to consume it. An electric tramway has been sanctioned to run for about four miles through the city. The receipts of the cantonment fund during the ten years ending 1901 averaged Rs. 50,000, and the expenditure Rs. 48,000. In 1903-4 the income and expenditure were Rs. 60,000 and Rs. 68,000 respectively. The ordinary garrison in the cantonment consists of British infantry and artillery, and Native infantry and cavalry.

Commerce.

While Cawnpore first became of importance as a military cantonment, its subsequent growth has been the result of alterations in trade routes dating from its connexion by rail with Calcutta in 1863. When the demand for cotton arose during the American Civil War, it was easiest to send it from Bundelkhand to the railway at Cawnpore. The strain on Cawnpore was difficult to meet. Lands covered with the mud huts of camp-followers were hastily taken up by the authorities. Commissariat elephants were brought out to push down the frail erections in order to clear space for the storage of the bales of cotton, which, piled up level with the roofs, had been blocking every lane in the city. At the same time the ordinary country produce of the Doāb and of Oudh began to pour in here instead of passing by along the river. The trade which thus had its origin in the alignment of a railway has been immensely increased by the later development of the railway system of Upper India. In addition to the East Indian Railway, the Oudh and Rohilkhand and the Indian Midland broad-gauge systems pass through Cawnpore, providing through communication with the northern part of the Provinces and with Bombay, while the narrow-gauge lines traversing Rājputāna and Central India on the west, and the Districts north of the Gogra and Bihār and Bengal on the east, meet here. A network of sidings also connects these lines with the chief factories in the place. In the last ten years imports have increased by about 2,000,000 maunds, and exports by 3,000,000 maunds, or by 30 to 40 per cent. in each case.

Industries.

Cawnpore, however, is not only a collecting and distributing centre for raw products, such as cotton, food-grains, oilseeds, salt, saltpetre, sugar, and foreign manufactured goods; it has also become a great manufacturing town. In 1869 the Elgin Cotton-spinning and Weaving Mills were founded by a company and subsequently purchased by a private individual. Since then three other mills have been opened by companies: the Muir Mills in 1875, the Cotton Mills, Limited, in 1882, and the Victoria Mills in 1887. The total nominal capital in 1903-4 was 67 lakhs, excluding the Elgin Mills, and there were 3,215 looms and 242,616 spindles at work, employing 6,395 persons daily. The next industry to be organized in factories was tanning, which has now become of even greater importance than

cotton. In Upper India tanning is the traditional occupation of the Chamārs, who are also day-labourers, and formed a large proportion of the early population of the town. A Government Harness and Saddlery Factory—opened on a small scale soon after the Elgin Mills commenced operations—now employs 2,000 to 2,500 hands, and turns out goods valued at 30 lakhs annually. A still larger concern is the Army Boot and Equipment Factory, owned by a private firm, and employing over 3,000 persons. In 1903 the three large tanneries inspected under the Factory Act employed 4,915 persons; and, including small native works, it was estimated that the capital exceeded 45 lakhs and that about 10,000 hands were employed. Military requirements have been supplied not only throughout India, but to troops sent from England to Egypt, China, and South Africa, while the boots and shoes manufactured here are also sold in the Straits Settlements and in South Africa. The chief tanning material is the bark of the *babūl*-tree, which is found all over the Doāb. A woollen mill was opened in 1876, which has developed from a small blanket manufactory into a large concern with a capital of 20 lakhs, employing 1,500 hands and using 300 looms and 13,100 spindles, while the out-turn consists of every class of woollen goods, valued at 17 lakhs. The other factories in Cawnpore include a sugar-mill where rum is also manufactured, a jute-mill, seven cotton gins and presses, a tent factory, two flour-mills, a brush and cabinet-making factory, two iron foundries, a tape factory, and chemical works. There is a small but increasing native industry in cheap cutlery. The total capital sunk in manufacturing enterprise is estimated at one million sterling, and more than half the inhabitants of the city are directly dependent on it. It must be pointed out that the manufactures of cotton, wool, leather, flour, and sugar, referred to above, were all assisted materially in the first place by Government contracts for army purposes; but although their establishment without such aid might have been difficult, they could now, almost without exception, be maintained independently of the official market.

The Upper India Chamber of Commerce was founded at Cawnpore in 1889, and now represents practically every European commercial firm and manufacturing concern of consequence in the United Provinces and the Punjab. The association takes for its object the general welfare and interests of trade and commerce, and has supplied a want which would otherwise have been greatly felt. It has recently been decided to move the Allahābād Currency Office to Cawnpore.

Education.

The principal educational institution is Christ Church College, maintained by the Society for the Propagation of the Gospel Mission. It was founded as a high school in 1860 and affiliated to the Calcutta University in 1866. It is now affiliated to Allahābād, and was raised to the first grade in 1896.

In 1904 the number of students on the rolls was 106. The same mission also manages an industrial school, which includes a carpenter's shop and brass foundry. The municipality maintains ten schools and aids twelve others, with a total attendance of 1,046. An agricultural school at which *kānungos* are trained, with a large experimental farm, situated in the old civil lines, north of the city, is now being converted into a college. There are twenty-four printing presses and three weekly and four monthly newspapers, none of which is of much importance.

[Valuable information on the trade of Cawnpore has been obtained from a note by the late W. B. Wishart, secretary to the Chamber of Commerce.]

Ceded Districts.—In 1800 the Nizām of Hyderābād ceded to the British, in return for a subsidiary force to be maintained in his dominions, the territories he had acquired from Mysore by the treaties of 1792 and 1799 which closed the second and third Mysore Wars. These included the recent Madras Districts of Bellary and Cuddapah and four *tāluks* of what is now Kurnool District, and were known as the Ceded Districts. The rest of Kurnool was at that time in the possession of a Nawāb who was tributary to the Nizām, and the latter's suzerainty passed to the Company. In 1839 the Nawāb rebelled and his territory was annexed by the British. In 1882 the District of Bellary was divided into the two existing Districts of Bellary and Anantapur. The four Collectorates thus established, Cuddapah, Kurnool, Bellary, and Anantapur, are still known as the Ceded Districts.

Ceded and Conquered Provinces.—A tract of country in Northern India acquired by the British in 1801 and 1803, and now forming part of the UNITED PROVINCES. *See* also AGRA PROVINCE.

Central Division (Bombay).—This Division lies between 16° 48′ and 22° 2′ N. and 73° 15′ and 76° 26′ E., and comprises the Districts of AHMADNAGAR, KHĀNDESH, NĀSIK, POONA, SĀTĀRA, and SHOLĀPUR. It extends from the Sātpurās in the north to the Bhīma in the south-east, and has an area of 37,192 square miles and a population (1901) of 5,944,447. The total population increased by 18 per cent. in the twenty years previous to 1891, but in the next decade there was a decrease of 4 per cent., due to plague and famine. The density is 159 persons per square mile, being slightly higher than the average of the British Districts in the Presidency. Classified according to religion, Hindus form 92 per cent. of the total, and Muhammadans 6 per cent., while other religions include 73,830 Jains, 43,130 Christians, 4,263 Pārsīs, and 11,697 Animists.

The following table shows the area, population, and land revenue and cesses of each District comprised in the Division :—

District.	Area in square miles.	Population, 1901.	Land revenue and cesses, 1903-4, in thousands of rupees.
Ahmadnagar . .	6,586	837,695	18,04
Khāndesh * . .	10,041	1,427,382	46,06
Nāsik . . .	5,850	816,504	17,68
Poona . . .	5,349	995,330	15,18
Sātāra . . .	4,825	1,146,559	21,96
Sholāpur . . .	4,541	720,977	12,31
Total	37,192	5,944,447	1,31,23

* In 1906 Khāndesh was divided into two Districts, called West and East Khāndesh. *See* KHANDESH DISTRICT.

Excepting Khāndesh, which lies mainly in the Tāpti valley, all the Districts are part of the great Deccan plain. The Division contains 75 towns and 8,819 villages. The largest towns are POONA (153,320 with cantonments), AHMADNAGAR (42,032), BĀRSI (24,242), DHŪLIA (24,726), NĀSIK (21,490), PANDHARPUR (32,405), SĀTĀRA (26,022), and SHOLĀPUR (75,288). The chief places of commercial importance are Poona, which is the head-quarters of the Commissioner, and Sholāpur. Nāsik and Pandharpur are famous for religious gatherings. Sātāra was the capital of the Marāthā Rājās from the time of Sivajī's successor till the Peshwās. Kārli near Poona has cave-temples of archaeological interest. Junnar in Poona District was once famous as the capital of the early dynasties of Kshatrapas, and has many interesting remains. Poona is also the rainy season head-quarters of the Government of Bombay, and contains a College of Science, the only one in the Presidency.

Under the supervision of the Commissioner of the Central Division are the following Political Agencies :—

Agency.	Name of State.	Area in square miles.	Population, 1901.	Gross revenue, 1903-4, in thousands of rupees.
Poona . .	Bhor	1,491	137,268	3,69
Sātāra . .	Aundh and Phaltan .	844	109,660	4,31
Nāsik . .	Surgāna . . .	360	11,532	19
Sholāpur . .	Akalkot . . .	498	82,047	4,57
	Total	3,193	340,507	12,76

Central Division (Southern Shan States).—A group of Shan States, Burma, consisting of the Sawbwaships of Möngpai and Lawksawk with their dependencies, and the Myozaships of Samka (with one dependency), Nawngwawn, Hsahtung (with two dependencies), Wanyin, Hopong (with one dependency), Namhkok, and Sakoi. The

division is in charge of an Assistant Superintendent stationed at Taunggyi.

Central India.—An Agency or collection of Native States, under the political supervision of the Agent to the Governor-General in Central India, lying between 21° 22′ and 26° 52′ N. and 74° 0′ and 83° 0′ E. The head-quarters of the Agent to the Governor-General are at INDORE. The Agency may be roughly said to consist of two large detached tracts of country, separated by the wide and winding valley of the Betwā river, which, starting from Jhānsi, spread out east and west into the Peninsula; northwards its territories stretch to within 30 miles of Agra, and southwards to the Sātpurā Hills and the Narbadā valley. The country has a general declination to the north, the land falling from an elevation of 2,000 feet above the sea along the Vindhyan range to about 500 feet along its northern boundary.

Physical aspects.

Central India is bounded on the north-east by the United Provinces of Agra and Oudh. On the east, and along the whole length of its southern border, lie the Central Provinces; the south-western boundary is formed by Khāndesh, the Rewā Kāntha Agency, and the Pānch Mahāls of Bombay; while various States of the Rājputāna Agency enclose it on the west and north. The total area of this tract is 78,772 square miles, and the population (1901) 8,628,781; but, excluding areas situated in it which belong to States in Rājputāna, and including outlying portions of Central India States, the area is 77,395 square miles and the population (1901) 8,510,317.

The name Central India, now restricted officially to the territories under the immediate political control of the Agent to the Governor-General in Central India, is a translation of the old Hindu geographical term Madhya Desa or the Middle Region, which was, however, used to designate a far larger and very different tract of country. The term Central India was officially applied at first to MĀLWĀ alone; but in 1854, when the BUNDELKHAND and BAGHELKHAND districts were added to Mālwā to form the present Central India Agency, it was extended to the whole tract.

There is a marked diversity in the physical aspects, climate, scenery, people, and dialects in different parts of the Agency, which falls into three natural divisions. These may be conveniently designated the plateau, the low-lying, and the hilly tracts. The plateau takes in most of MĀLWĀ, the wide table-land with a mean elevation of about 1,600 feet above the sea, an area of 34,637 square miles, and a population of 102 persons per square mile, which forms the major portion of the western section of the Agency. Mālwā, taking the term in its widest application, includes all the country lying between the great Vindhyan barrier, which forms the northern bank of the Narbadā valley, and

a point just south of Gwalior; its eastern limit is marked by the ridge which runs from south to north starting near Bhīlsa, while its western limit marches with the Rājputāna border. The inhabitants of this tract are hard-working agriculturists, speaking for the most part dialects of Rājasthānī. The low-lying division embraces the country round Gwalior, and to the north and north-east of it, extending thence across into Bundelkhand, of which it includes the greater part, till it meets the Kaimur Hills in Baghelkhand. The area of this tract is about 18,370 square miles, and the population 172 persons per square mile, its mean elevation being about 700 feet above the sea. The inhabitants are agriculturists, but of a more sturdy physical type, thick-set and of lower average stature than the Mālwā peasantry. They speak chiefly dialects of Western Hindī. The hilly tracts lie principally along the Vindhya and Sātpurā ranges and their numerous branches. This division has an area of about 25,765 square miles, and a population of only 74 persons per square mile. The inhabitants are chiefly Bhīls, Gonds, Korkūs, and other tribes of non-Aryan or mixed descent, who practise but little agriculture and speak for the most part a bastard dialect compounded of Gujarātī, Marāthī, Mālwī, and Hindī.

Strictly speaking, there is but one range of mountains in Central India. In the south-western portion of the Agency this range is divided by the Narbadā river into two parallel lines, the northern line being known as the VINDHYAS and the southern as the SĀTPURĀS. The branch of the Vindhyas which strikes across Bundelkhand is termed the Pannā range, while the arm which runs in a boldly defined scarp north of the Son river is called the KAIMUR range. The small chain which links up the Vindhya and Sātpurā systems near Amarkantak is called the MAIKALA. Other branches of less importance have local names.

This hill system, of which isolated peaks rise to over 3,000 feet above sea-level, has a marked effect on the climate of Central India, both from the high table-land which it forms on the west, and from the direction it gives to the prevailing wind at different seasons. At the same time it forms the watershed of the Agency. In the tract of country which lies north of the Vindhyas all streams of importance rise in this range and, except the SON, flow northwards, the BETWĀ, CHAMBAL, KĀLĪ SIND, MAHĪ, PĀRBATI, SIND, and SIPRĀ on the west, and the DHASĀN, KEN, and TONS on the east, all following a general northerly course till they ultimately join the water-system of the Gangetic Doāb.

There are no large rivers south of the Vindhyas except the NARBADĀ, which, rising in the Maikala range, flows in a south-westerly direction till it falls into the sea below Broach. None of the Central Indian rivers is, properly speaking, navigable, though sections of the Narbadā

can be traversed for a few months of the year. No lakes deserve special mention except those at Bhopāl, though large tanks are numerous, especially in the eastern section.

An infinite variety of scene is presented. The highlands of the great Mālwā plateau are formed of vast rolling plains, bearing, scattered over their surface, the curious flat-topped hills which are so marked a characteristic of the Deccan trap country—hills which appear to have been all planed off to the same level by some giant hand. Big trees are scarce in this region, except in hollows and surrounding villages of old foundation; but the fertile black cotton soil with which the plateau is covered bears magnificent crops, and the tract is highly cultivated. Where no grain has been planted, the land is covered with heavy fields of grass, affording excellent grazing to the large herds of cattle which roam over them. During the rains, the country presents an appearance of unwonted luxuriance. Each hill, clothed in a bright green mantle, rises from plains covered with waving fields of grain and grass, and traversed by numerous streams with channels filled from bank to bank. This luxuriance, however, is but short-lived, and, within little more than a month after the conclusion of the rains, gives place to the monotonous straw colour which is so characteristic of this region during the greater part of the year. Before the spring crops are gathered in, however, this yellow ground forms an admirable frame to set off broad stretches of gram and wheat, and the brilliant fields of poppy which form a carpet of many colours round the villages nestling in the deep shade of great mango and tamarind trees.

In the eastern districts the aspect is entirely different. The undulating plateau gives place to a level and often stone-strewn plain, dotted here and there with masses of irregularly heaped boulders and low serrated ridges of gneiss banded with quartz, the soil, except in the hollows at the foot of the ridges, being of very moderate fertility, and generally of a red colour. Big trees are perhaps more common, and tanks numerous. Many of these tanks are of considerable antiquity, and are held up by fine massive dams. Though some are now used for irrigation, examination shows that they were not originally made for that purpose, but merely as adjuncts to temples and palaces or the favourite country seat of some chief, the low quartz hills lending themselves to the construction of such works.

In the hilly tracts the scene again changes. On all sides lie a mass of tangled jungles, a medley of mountain and ravine, of tall forest trees and thick undergrowth, traversed by steep rock-strewn watercourses which are filled in the rains by roaring torrents. Here and there small collections of poor grass-thatched huts, surrounded by little patches of cultivation, mark the habitation of the Bhīl, Gond, or Korkū. Along the Son valley and the bold scarp of the Vindhyas, over which the

Tons falls into the plains below in a series of magnificent cataracts, the scenery at the close of the rains is of extraordinary beauty.

Each tract has its history recorded in ruin-covered sites of once populous cities, in crumbling palaces and tombs, decaying shrines, and mutilated statues of the gods.

[1] Geologically, Central India belongs entirely to the Peninsular area of India. It is still to a large extent unsurveyed, yet such parts as have been more or less completely studied enable a general idea of its geological conformation to be given.

The most remarkable physical feature of this vast area, and one intimately connected with its geological peculiarities, is the almost rectilinear escarpment known as the Vindhyan range. From Rohtāsgarh on the east, where the Son bends round the termination of the range, up to Ginnurgarh hill, in Bhopāl territory, on the west, a distance of about 430 miles, the escarpment consists of massive sandstones belonging to the geological series which, owing to its preponderance in this range, has been called the Vindhyan series. At Ginnurgarh hill, however, the sandstone scarps take a sudden bend to the north-west, and trend entirely away from the Vindhyan range proper, though as a geographical feature the range continues for almost 200 miles beyond Ginnurgarh. It no longer consists, however, of Vindhyan strata in the geological sense, being formed mostly of compact black basalts, the accumulated lava-flows of the ancient volcanic formation known as Deccan trap. It has been well established, by a geological study of this region, that the Vindhyan series is immensely older than the Deccan trap, and that the surface of the Vindhyan rocks, afterwards overwhelmed by these great sheets of molten lava, had already been shaped by denudation into hills and dales practically identical with those which we see at the present day.

In the roughly triangular space included between the Vindhyan and Arāvalli ranges and the Jumna river, which comprises the greater portion of the Central India Agency, rocks of the Vindhyan series prevail. The greater part of this area is in the shape of a table-land, formed mostly of Vindhyan strata, covered in places by remnants of the Deccan basalts, especially in the western part of Mālwā, where there are great continuous spreads of trap. The Vindhyans do not, however, subsist over the whole of the triangular area thus circumscribed, owing to their partial removal by denudation. The floor of an older stratum, upon which they were originally deposited, has been laid bare over a great gulf-like expanse occupied by gneissose rocks, known as the Bundelkhand gneiss.

South of the Vindhyas, besides a strip of land, mainly alluvial, between the Vindhyan scarp and the Narbadā, the Agency includes at its eastern and western extremities two large areas that extend a considerable

[1] By Mr. E. Vredenburg of the Geological Survey of India.

distance southwards. The western area, bordering on Khāndesh, includes a portion of the Sātpurā range mainly formed of Deccan trap. The eastern area comprises all the southern portion of Rewah, and includes an extremely varied rock series, the most extensive outcrop in it belonging to the Gondwāna coal-bearing series.

The geology of Central India is thus more complex than that of any other area of similar extent in the Peninsula: scarcely one of the Peninsula groups is unrepresented, and it contains the type areas of several among them. The rock series met with may thus be tabulated:—

Central India formations.	Corresponding European and American formations.	
Fossiliferous.		
Aryan Group.		
10. Recent alluvium.	Recent } Post Tertiary	Cainozoic.
9. Older Narbadā alluvium.	Pleistocene } Post Tertiary	Cainozoic.
8. Laterite.		
7. Deccan trap and inter-trappeans.	Cretaceous	Mesozoic.
6. Lametas; and marine Bāgh beds.		Mesozoic.
5. Gondwānas.		
(*a*) Dāmudas.	Triassic	Mesozoic.
(*b*) Tālchers.	Permian	Palaeozoic.
Unfossiliferous.		
Purāna Group.		
4. Vindhyans.	Keweenawan	Algonkian.
3. Systems intermediate between Vindhyans and Bijāwars.		Algonkian.
2. Bijāwars.	Animikie	Algonkian.
Archaean.		
1. Gneisses (Bundelkhand gneiss).		Archaean.

Among these, the first to arrest attention by reason of its preponderance is the Vindhyan series, covering a surface not greatly inferior to that of England. Of the eastern portion of their outcrop, occupying a considerable part of Bundelkhand and Baghelkhand, an excellent description will be found in Mr. Mallett's 'Vindhyan Series' (*Memoirs, Geological Survey of India*, vol. vii, part i). The Vindhyans consist of alternating bands of hard sandstones and comparatively soft flags and shales, which, owing to the marked differences that they exhibit in their degree of resistance to denudation, give rise to the regular escarpments, capped by sandstones with an underscarp of softer rocks, which constitute the most noticeable physical feature of this region.

Three of the massive sandstones stand out so conspicuously that they are distinguished by special names. The lowest of these, which forms the outer ranges to both north and south, is called the Kaimur sandstone, being chiefly met with in the range of that name. The next, forming the second or middle scarp, is called the Rewah sandstone after the State in which it is finely exhibited. The third scarp contains the

newest rock of the whole group, called the Bandair (Bhānder) sandstone from the small range which it caps, to the south of Nāgod.

Along the Vindhyan range proper, these three great scarps are not so clearly marked as elsewhere, but in the northern branch they stand out perfectly distinct. The northernmost range constituting the first or outer scarp is capped by Kaimur sandstone and exhibits very bold scarps, often almost vertical and quite inaccessible, deeply cut into by the river valleys. Numerous detached masses or outliers stand in front of the main line of escarpment, often crowned by those formerly impregnable fortresses which have played so important a part in the history of India, such as KĀLINJAR, BĀNDHOGARH, and AJAIGARH. Along a portion of this scarp and in all the deep valleys that penetrate it, the Kaimur sandstone rests upon the flaggy limestones, underlaid by shales and thin bands of sandstone, which constitute the lower Vindhyans; in most of the outliers, the Kaimur sandstone rests directly upon the Bundelkhand gneiss.

In the Son valley the sandstones contain a remarkable group of highly siliceous rocks known as porcellanites, a name which accurately describes their appearance. They are indurated volcanic ashes of a strongly acid type, containing a high percentage of silica. When the fragments of volcanic dust become sufficiently large to be distinguished without a magnifying power, the appearance of the rock changes to that of the variety designated as trappoid. These beds indicate an ancient period of intense volcanic activity. The beds below the porcellanites, the basal beds of the Vindhyans, consist of a variable thickness of shale, limestone, and conglomerate, the last being the oldest rock of the entire Vindhyan series. A very constant, though not universally present, division occurs in the Kaimur at the base of the massive sandstone, and is called the Kaimur conglomerate.

At the eastern extremity of the Rewah scarp, the entire thickness of the lower Rewah formation consists of a continuous series of shales, but in some parts of Bundelkhand this is divided into two portions by an intermediate sandstone. The shales below this sandstone are called the Pannā shales, after the town of that name, and those above it Jhīrī shales, after a town in Gwalior territory. A bed of great economic importance, the diamond-bearing conglomerate, is intercalated in the midst of the Pannā shales. It is found only in some small detached outcrops near Pannā and east of that place, and the richest of the celebrated mines are those worked in this diamond-bearing bed. The diamonds occur as scattered pebbles among the other constituents of the conglomerate.

The lower Bandairs of Bundelkhand and Baghelkhand closely resemble the lower Vindhyans; like them, they are principally a shaly series with an important limestone group and some subsidiary sandstone.

The limestone band is of considerable economic importance, yielding excellent lime. It is to a great extent concealed by alluvium, but comes into view in a series of low mounds, one of the best known being situated near NĀGOD, whence it has been called Nāgod limestone.

On entering Central India at Bhopāl, the Vindhyans are shifted so as to run to the north of the great faults, and the whole series again comes into view, presenting all the main divisions met with in Bundelkhand and Baghelkhand. Little alteration has taken place in the series, in spite of the distance from the eastern outcrops, except that the Pannā shales are replaced by flaggy sandstones. The lower Bandairs and lower Vindhyans have changed in constitution, the calcareous and shaly element being replaced by an arenaceous development, giving the entire Vindhyan series a greater uniformity than it presents farther east. The scarps which form the northern part of the syncline in Bundelkhand curve round the great bay of Bundelkhand gneiss and continue up to the town of Gwalior, after which they sink into the Gangetic alluvium. The main divisions are represented here even more uniformly than in Bhopāl. An additional limestone band is, however, intercalated among the Sirbū shales, known as the Chambal limestone. The lower Vindhyans are absent, the Kaimur conglomerate resting immediately on the Bundelkhand gneiss. In the neighbourhood of Nīmach the Kaimur, Rewah, and Bandair groups are all represented.

No fossils have ever been found in the Vindhyans, so that their age still remains doubtful. It seems probable that the range, or at least the greater part of it, is older than the Cambrian series in England, which would account for its unfossiliferous nature.

Next in importance to the Vindhyan series, by reason of the vast area which it occupies, is the Bundelkhand gneiss, forming, as already mentioned, a great semicircular bay surrounded by cliffs of the overlying Vindhyans. The Bundelkhand gneiss is regarded as the oldest rock in India. It consists principally of coarse-grained gneissose granite, and is very uniform in composition. The gneiss is cut through by great reefs of quartz striking nearly always in a north-easterly direction, which form long ranges of steep hills of no great height with serrated summits, and cause a marked difference in the scenery of the country. This formation gives special facility for the construction of tanks. Innumerable narrow dikes of a much later basic volcanic rock cut through the Bundelkhand gneiss. Towards the Jumna the gneiss vanishes below the Gangetic alluvium.

As a rule, the sandstone cliffs which surround the gneiss rest directly on that rock. In places, however, an older series intervenes, named after the BIJĀWAR STATE in which its type area is found. The same series is met with near Gwalior town, forming a range of hills that strikes approximately east and west. The identity of these rocks with

the Bijāwars is now determined; they were, however, long regarded as of a different type and were known as the Gwalior series. Other outcrops of these series are met with in the Narbadā valley and south of the Son. These rocks have been subjected to far more pressure and folding than the Vindhyans, and their shales have been converted into slates and their sandstones into quartzites, while the bottom bed is invariably a conglomerate full of pebbles of white quartz.

The most characteristic rocks of the Bijāwars are the layers of regularly banded jaspers which are frequently intercalated among the limestones. They usually contain a large proportion of hematite, giving them a fine red colour, which makes them highly ornamental and in great demand for inlaid decoration, such as that worked at Agra. The proportion of hematite is often high enough to make it a valuable iron ore, and the sites of old iron workings may be met with everywhere on the Bijāwar outcrops. In Bijāwar itself the ore has become concentrated in a highly ferruginous lateritic formation, which must have accumulated in the long period that intervened between the deposition of the Bijāwars and Vindhyans. (See 'Geology of Gwalior and Vicinity,' *Records, Geological Survey of India*, vol. iii, pp. 33–42; vol. xxx, pp. 16–41.)

The series underlying the Vindhyans to the south of the Son river are very complex. (See 'Geology of the Son Valley,' *Memoirs, Geological Survey of India*, vol. xxxi, part i.)

The Archaean rocks met with in the Narbādā valley in Nemāwar, at Bāgh and Alī Rājpur, conform in character to the Bundelkhand gneiss.

The forces that so violently disturbed the Vindhyans in the Son and Narbadā valleys were the last manifestations of true orogenic phenomena that have affected the Peninsular portion of India. All the disturbance that has taken place since then has been of an entirely different nature. Great land masses have sunk bodily between parallel fractures, and in the areas thus depressed a series of land or fresh-water deposits have been preserved. These are called the Gondwāna series, from their being found principally in the tract so named. This series has received a large amount of attention on account of the rich stores of coal which it contains. The Gondwānas have been subdivided into several groups, those known as the Dāmuda and Tālcher groups, and the lowest subdivision of the Dāmudas, the Barākar, being the richest in coal seams. (See 'The Southern Coal Fields of the Rewah Gondwāna Basin,' *Memoirs, Geological Survey of India*, vol. xxi, p. 3.) The Barākar beds consist of sandstones and shales with numerous coal seams, and cover a large area of Rewah. The UMARIĀ mines are excavated in this horizon.

In the Cretaceous period the sea advanced and covered a considerable area which had remained dry land since the end of the Vindhyan period, leaving limestone deposits full of marine organisms. The beds of this

deposit are known as the Lametas from a *ghāt* of this name near Jubbulpore, whence they extend westwards to Barwāha in the Indore State. An examination lately made by Mr. Vredenburg has shown that the Cretaceous beds at Bāgh and the Lametas are identical and not, as has been hitherto supposed, two different rocks (*Quarterly Journal, Geological Society of London*, vol. xxx (1865), pp. 349–63, and *Records, Geological Survey of India*, vol. xx, pp. 81–92). The sandstones and limestones of the Lametas yield excellent building materials. The Buddhist caves at BĀGH are cut in Nimār sandstone which underlies the Bāgh beds. A handsome variety of marine limestone, called coralline limestone, has been largely used in the ancient buildings of MĀNDU. Ores of manganese are found in the conglomerate which forms the basement of the Lametas.

The Lameta period was a short one; and before its deposits were overwhelmed by the gigantic basalt flows of the Deccan trap, they had already been largely denuded. The whole of what is now Central India was overwhelmed by these stupendous outpourings of lava. Denudation acting upon them during the whole of the Tertiary period has removed a great part of this accumulation. The subsisting portions, consisting of successive horizontal layers, have been denuded into terraced hills. The name trappean or 'step-like' originated from similar formations in Europe. In spite of denudation, this rock still covers a large area.

A peculiar form of alteration that seems to have been very active in former geological times produced the red-coloured highly ferruginous rock known as laterite (from *later*, 'a brick'), which still subsists as a horizontal layer of great thickness, capping some of the highest basaltic table-lands, while it also occurs at long distances from the present limits of the Deccan trap, showing the immensely greater area formerly covered. This rock contains a large percentage of alumina, probably suitable for the extraction of that metal.

In some regions from which the basaltic flows have been completely removed by denudation, the fissures through which the molten rock reached the surface are indicated by numerous dikes. They are especially plentiful in the Gondwānas in Rewah. Near Bāgh one of the dikes is remarkable for its gigantic dimensions and columnar structure. To the exact age of the Deccan trap there is no clue.

Along the Narbadā valley there are some fresh-water beds which have long attracted attention, but have not yet been fully investigated. Their peculiar interest lies in the fact that they were certainly deposited by streams totally unrelated to the Narbadā, which there is every reason to suppose is the most recent river system in India.

The recent deposits are of no very great thickness, and consist of ordinary alluvium, gravel, and soils. An immense area in Central

India is covered with the famous black cotton soil, a dark-coloured earth formed by the decomposition of the Deccan trap, which is of great richness and fertility, especially the variety found in Mālwā.

[1] The vegetation of Central India consists chiefly of deciduous forest, characterized by the presence of a considerable number of plants that flower profusely in the hot months. Of these the most conspicuous are two species of *Butea*, one a tree (*B. frondosa*), the other a climber (*B. superba*). Less common but still widespread and very noticeable is the yellow-flowered *gangal* (*Cochlospermum gossypium*).

The more valuable trees include teak (*Tectona grandis*), *anjan* (*Hardwickia binata*), *harra* (*Terminalia Chebula*), *bahera* (*T. belerica*), *kahua* (*T. Arjuna*), *sāj* (*T. tomentosa*), *bījāsāl* (*Pterocarpus Marsupium*), *tendū* (*Diospyros tomentosa*), *tinis* (*Ougeinia dalbergioides*), *sitsal* (*Dalbergia latifolia*), and *shīsham* (*D. Sissoo*). The natural families of *Meliaceae*, *Sterculiaceae*, *Bignoniaceae*, and *Urticaceae* are all well represented in the forests. The more shrubby forms include species of *Capparis*, *Zizyphus*, *Grewia*, *Antidesma*, *Phyllanthus*, *Flueggea*, *Cordia*, *Wrightia*, *Nyctanthes*, *Celtis*, *Indigofera*, *Flemingia*, and *Desmodium*.

The *avali* (*Cassia auriculata*) is very characteristic of outcrops of laterite amid black cotton soil, while *Balanites Roxburghii*, *Cadaba indica*, *āk* or *madār* (*Calotropis procera*), *babūl* (*Acacia arabica*), and other species are found in the cotton soil itself. The climbing plants most characteristic of this region include some species of *Convolvulaceae*, many *Leguminosae*, a few species of *Vitis*, *Jasminum*, and some *Cucurbitaceae*. The herbaceous undergrowth includes species of *Acanthaceae*, *Compositae*, *Amarantaceae*, *Leguminosae*, and many grasses which, though plentiful during the monsoon period, die down completely in the hot season. Palms and bamboos are scarce.

In gardens it is possible to grow most European vegetables, and almost all the plants which thrive in the plains of Northern India, as well as many belonging to the Deccan.

All the animals common to Peninsular India are to be met with in the Agency. Up to the seventeenth century elephants were numerous in many parts of Central India, the *Ain-i-Akbarī* mentioning Narwar, Chanderī, Satwās, Bijāgarh, and Raisen as the haunts of large herds. The Mughal emperors used often to hunt them, using both the *khedda* and pits (*gār*) or an enclosure (*bār*). The elephants from Pannā were considered the best. Another animal formerly common in Mālwā was the Indian lion. The last of the species was shot near Guna in 1872. Most chiefs preserve tiger and *sāmbar*, while special preserves of antelope and *chītal* are also maintained in some places. In Hindu States peafowl, blue-rock pigeons, the Indian roller, the *sāras*, and

[1] By Lieut.-Col. D. Prain, I.M.S., of the Botanical Survey of India.

a few other birds are considered sacred, while in many places the fish are similarly protected.

The commonest animals are mentioned in the following list. *Primates: langūr* (*Semnopithecus entellus*), *bandar* (*Macacus rhesus*). *Carnivora*: tiger (*Felis tigris*), leopard (*Felis pardus*), hunting leopard (*Cynaelurus jubatus*), mungoose (*Herpestes mungo*), hyena (*Hyaena striata*), wild dog (*Cyon dukhunensis*), Indian fox (*Vulpes bengalensis*), wolf (*Canis pallipes*), jackal (*Canis aureus*), otter (*Lutra vulgaris*), black bear (*Melursus ursinus*). *Ungulata: nīlgai* (*Boselaphus tragocamelus*), four-horned antelope (*Tetracerus quadricornis*), black buck (*Antilope cervicapra*), spotted deer (*Cervus axis*), *sāmbar* (*Cervus unicolor*), wild boar (*Sus cristatus*). The bison (*Bos gaurus*) and buffalo (*B. bubalus*) were formerly common in the Sātpurā region, but are now only occasionally met with. Most of the birds which frequent the Peninsula are found, both game-birds and others. *Reptilia*: crocodile (*Crocodilus porosus* and *Gavialis gangeticus*), tortoise (*Testudo elegans*), turtle (*Nicoria trijuga*), various iguanas and lizards. Snakes are most numerous in the eastern section of the Agency. Three poisonous species are common: the cobra (*Naia tripudians*), Russell's viper (*Vipera russellii*), and the *karait* (*Bungarus caeruleus*). The *Echis carinata*, a venomous if not always deadly snake, of viperine order, is also frequently seen. Of harmless snakes the commonest are the ordinary rat snake or *dhāman* (*Zamenis mucosus*), *Lycodon aulicus*, *Gongylophis conicus*, *Tropidonotos plumbicolor*, *Dendrophis pictus*; various *Oligodones* and *Simotes* and pythons (*Eryx johnii*) are common on the hills and in thick jungle.

Rivers and tanks abound with fish, the mahseer (*Barbus tor*) being met with in the Narbadā, Chambal, Betwā, and other large rivers, and the *rohū* (*Labeo rohita*) and *marral* or *sānwal* (*Ophiocephalus punctatus*) in many tanks. It should be noted that the Morār river in Gwalior has given its name to the *Barilius morarensis*, which was first found in its waters.

Of the insect family, the locust, called *tiddi* or *poptia*, is an occasional visitor. The most common species is the red locust (*Phymatea punctata*). Cicadas, butterflies, moths, mosquitoes, sand-flies, and many other classes, noxious and innocuous, are met with.

The climate of Central India is, on the whole, extremely healthy, the elevated plateau being noted for its cool nights in the hot season, proverbial all over India. The Indo-Gangetic plain divides the highlands of Central India from the great hill system of the north, while the lofty barriers of the Vindhya and Sātpurā ranges isolate it from the Deccan area. These two parallel ranges, which form its southern boundary, have, moreover, a marked effect on the climate of the plateau, the most noticeable being the pronounced westerly direction which they give to the winds.

The temperature in Central India rises rapidly in April and May, when Indore, Bhopāl, and the plateau area generally fall within the isotherm of 95°, while the low-lying sections are cooler, the average temperature being about 90°. The plateau enjoys the more even temperature, showing a difference of only 26° between the mean temperature in January and in May, while in the low-lying section the range is 32°. The diurnal range in January in the eastern part of the Agency is 26°, as compared with 29° in the plateau; in the hot season there is no appreciable difference, but in the rains the variation is 11° in the low-lying area and 13° on the plateau. The average maximum and minimum temperatures in January are 77° and 48° on the plateau, and 74° and 48° in the low-lying area; in May the maximum and minimum temperatures of the plateau rise to 103° and 76°, compared with 107° and 81° in the low-lying tract. In the rains the maximum and the minimum temperatures are 83° and 71° on the plateau, and 87° and 77° in the low-lying tract. The low-lying area is thus subject to greater extremes of both heat and cold.

The following table gives the average temperature (in degrees Fahrenheit) in four typical months at certain meteorological stations:—

Station.	Height of Observatory above sea-level.	Average temperature for twenty-five years ending 1901 in							
		January.		May.		July.		November.	
		Mean.	Diurnal range.	Mean.	Diurnal range.	Mean.	Diurnal range.	Mean.	Diurnal range.
Eastern Section.	Ft.								
Satnā .	1,040	61·3	26·3	92·3	26·0	82·7	10·8	67·9	27·3
Nowgong	757	60·8	27·3	93·6	27·6	84·4	12·0	67·9	28·7
Western Section.									
Nīmach .	1,630	63·0	28·6	90·5	26·7	81·0	13·6	70·0	29·5
Indore .	1,823	64·4	29·4	89·4	26·8	78·9	12·3	68·9	29·1

NOTE.—The diurnal range is the average difference between maximum and minimum temperatures of each day.

The variation in the humidity of Central India during the year is also very marked. There are two distinct periods of maximum and minimum. The period of minimum humidity during the summer months occurs in March and April on the plateau, and in April and May in the low-lying area, while in both areas November and February are the least humid of the winter months. In August in summer, and in January in winter, the humidity reaches a maximum.

The phenomenon of the hot season winds is very marked on the plateau. These winds, which begin about the middle of April, start blowing in the morning at 9 a.m., the hour of maximum diurnal pressure, and blow till 4 or 5 p.m., the time of minimum pressure.

A great fall in temperature occurs at sunset on the Mālwā plateau, the nights being usually calm and cool, even in the middle of the hot season, while a gentle west wind occasionally blows. On the plateau, moreover, the current continues to retain its pronounced westerly direction; the wind, at first dry, suddenly becoming moist, the climate, at the same time, undergoing a rapid and marked change, and the temperature falling 14 to 16 degrees. The Mālwā portion of Central India is supplied principally by the Bombay monsoon current, while the eastern section of Bundelkhand and Baghelkhand shares in the currents which enter by the Bay of Bengal.

The annual rainfall on the plateau averages about 30 inches, and in the low-lying tract 45 inches. The low-lying tract gets much more rain in June than the plateau, the rain there starting earlier and falling more copiously throughout the season. The winter rains usually fall in January or the beginning of February, and are very useful to the *rabi* crop sowings. There is little doubt that the rainfall of the plateau area has undergone a marked decrease. Sir John Malcolm's observations (at Mhow) give an average of 50 inches, and general report points to a diminution of at least 20 inches during the last sixty or seventy years.

The following table gives the annual rainfall, month by month, at certain meteorological stations:—

Station.	Average rainfall (in inches) for twenty-five years ending 1901 in												
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total of year.
Eastern Section.													
Satnā	1·01	0·69	0·38	0·12	0·43	6·53	13·89	12·56	6·27	2·31	0·31	0·48	44·98
Nowgong	0·81	0·57	0·23	0·07	0·31	7·30	12·30	12·18	5·6[illegible]	1·06	0·24	0·58	41·30
Western Section.													
Nīmach	0·23	0·14	0·06	0·12	0·45	4·52	8·50	8·94	5·18	0·71	0·20	0·34	29·39
Indore	0·22	0·20	0·05	0·14	0·56	5·93	8·89	7·77	7·09	1·36	0·29	0·20	32·70

Storms and cyclones are very rare in Central India. Serious floods occurred at Indore in 1872, considerable damage being done to houses and property. Slight shocks of earthquake were felt in 1898 in Bhopāl and Bundelkhand.

History.

The country now comprised in the Central India Agency was probably once occupied by the ancestors of the Bhīls, Gonds, Sahariās, and other tribes which now inhabit the fastnesses of the Vindhya range. Of these early days, however, we have no certain knowledge. The Rig Veda, though it records the spread of the Aryan races eastwards and westwards, never mentions the Narbadā river, while the great epics the Rāmāyana and Mahābhārata, and other sacred Hindu books, though

they tell of a struggle between the dark-skinned aboriginal and the light-coloured Aryan, already assign the hilly Vindhyan region and the Narbadā valley to the non-Aryan Pulindas and Sabaras, showing that these tribes had long since been driven out of the heart of the country.

From the early Buddhist books it appears that in Buddha's lifetime there were sixteen principal States in India, of which Avanti, with Ujeni (Ujjain) as its capital, was one, while the eastern section of Central India was comprised in the kingdoms of the Vatsas, of which Kausāmbhī was the chief town, and of the Panchālas. Villages appear in those days to have enjoyed a large share of autonomy under their headmen, while class distinctions were not very strongly marked. Buildings were mostly of wood, only forts and palaces being of stone. There is no mention of roads, but certain great routes with their stages are given. One of these ran from north to south, from Srāvastī in Kosala to Paithan in the Deccan, passing through Ujjain and Mahissatī (now MAHESHWAR), which are mentioned as halting stations.

With the establishment of the Maurya dynasty by Chandragupta some light breaks in upon the history of Central India. Chandragupta rapidly extended his empire over all Northern India, from the Himālayas to the Narbadā, and his grandson Asoka was sent to Ujjain as viceroy of the western provinces. Chandragupta was succeeded by his son Bindusāra (297-272 B.C.), who was followed by Asoka. Some years after his accession, Asoka, on becoming an ardent Buddhist, caused the erection of the famous group of *stūpas* round BHĪLSA of which that at SĀNCHĪ is the best known, and also in all probability the great *stūpa* which formerly stood at Bhārhut in NĀGOD. A fragment of one of his edicts has been discovered on a pillar at Sānchī.

On the death of Asoka (231 B.C.), his empire rapidly broke up; and, according to the Purānas, Central India, except perhaps the most western part of Mālwā, fell to the Sungas, who ruled at Pātaliputra (now Patna). Agnimitra, the hero of the play *Mālavikāgnimitra*, was viceroy of the western provinces, with his head-quarters at Vidisha (now BHĪLSA). On one of the gates from the *stūpa* at Bhārhut is an inscription stating that it was erected in the time of the Sungas. Under the Sunga rule a revival of Brāhmanism took place, and Buddhism began to lose the paramount position it had acquired under Asoka.

In the second century before the Christian era, the Sakas, a powerful Central Asian tribe, appeared in the Punjab and gradually extended their conquests southwards. One section of this horde entered Mālwā, and founded a line of Saka princes who are known as the Western Kshatrapas or Satraps (*see* MĀLWĀ). They soon became possessed of considerable independence, and except for a temporary check (A.D. 126)

at the hands of the Andhra king of the Deccan, Vilivāyakura II (Gautamīputra), ruled till about 390, when their empire was destroyed by Chandra Gupta II.

The Guptas of MAGADHA rose to power in the beginning of the fourth century. An inscription at Allahābād, of Samudra Gupta, second of this line (326–75), enumerates his foes, feudatories, and allies. Among the feudatories were the nine kings of Aryāvarta, one of whom, Ganapati Nāga, belonged to the Nāga dynasty of Padmāvatī, now Narwar, where his coins have been found. Among the unsubdued tribes on his frontiers certain races of Central India are named: the Mālavas, who were at this time under Satrap rule; the Abhīras, who lived in the region between Gwalior and Jhānsi, still called after them Ahīrwāra; and the Murundas, who seem to have lived in the Kaimur Hills in Baghelkhand. He also took into his service the kings of the forest country, apparently petty chiefs of Baghelkhand.

Chandra Gupta II (375–413), who succeeded Samudra, was the most powerful king of the dynasty. Extending his conquests in all directions he entered Mālwā, as we learn from two inscriptions at UDAYAGIRI near Bhīlsa, and destroyed the Kshatrapa power between 388 and 401, probably about 390. About 480 the regular Gupta succession ends, and the kingdom broke up, the Mālwā territory being held by independent Gupta princes. Of two of these, Budha Gupta and Bhānu Gupta, we have records dated 484 and 510.

The most interesting episode of this period is the invasion of the Gupta dominions in eastern Mālwā by Toramāna and his son Mihirakula. These chiefs were White Huns, a section of whom had overrun Eastern Europe in A. D. 375, another horde entering India a century later. During the reign of Skanda Gupta (455–80) they were held more or less in check; but on his death their leader Toramāna pressed south, and, after seizing GWALIOR and the districts round it, advanced into Mālwā and soon acquired possession of the eastern portion of that tract. From inscriptions found at GWALIOR, ERAN, and MANDASOR, it appears that Toramāna and his son Mihirakula held eastern Mālwā for about forty years, the local princes becoming their feudatories. Mihirakula, who succeeded his father about 510, was defeated finally in 528 by a combined attack of Nara Sinha Gupta Bālāditya of Magadha and Yasodharman who ruled at Mandasor.

At the end of the sixth century Prabhākara Vardhana, king of Thānesar in the Punjab, had extended his conquests southwards; and his younger son Harshavardhana, who succeeded an elder brother in 606, rapidly acquired possession of all Northern India and fixed his capital at Kanauj. After a reign of forty-two years he died, and his empire at once went to pieces. An interesting account of Jijhotī (Bundelkhand), Maheswapura (now MAHESHWAR) on the Narbadā, and

Ujjain at this period has been given by Hiuen Tsiang. The pilgrim, who visited Kanauj in 642–3, notices the decline of Buddhism, which had been steadily losing its position since the time of the Guptas.

During the fifth and sixth centuries a number of nomad tribes, the Gūrjaras, Mālavas, Abhīras, and others, who were possibly descended from the Central Asian invaders at the beginning of the Christian era, began to form regularly constituted communities. During the first half of the seventh century they were held in check by the strong hand of Harshavardhana; but on his death they became independent, and commenced those intertribal contests which made India such an easy prey to the Muhammadan invaders of the tenth and eleventh centuries.

The Mālavas and Abhīras were early settlers in Central India. Both appear to have come from the north-west, and by about the fifth century to have occupied the districts still called after them Mālwā and Ahīrwāra, the country to the east of Mālwā and west of the Betwā river, including Jhānsi, Sironj, and the tract stretching southwards to the Narbadā.

In the sixth century the powerful Kalachuri (Haihaya, or Chedi) tribe seized the line of the Narbadā valley, acquiring later most of BUNDELKHAND and BAGHELKHAND.

From the eighth to the tenth century, by a gradual process of evolution very imperfectly understood as yet, these tribes became Brāhmanized and adopted pedigrees which connected them with the Hindu pantheon, probably developing finally into the Rājput clans as we know them to-day; the Paramāras of Dhār, Tonwars of Gwalior, Kachwāhas of Narwar, Rāthors of Kanauj, and Chandels of Kālinjar and Mahobā all becoming important historical factors about this time.

Recent researches appear to show that all Central India was in the eighth century under the suzerainty of the Gūrjaras, a tribe who had settled in Rājputana and on the west coast in the tract called after them Gujarāt. They gradually extended their power till their chief Vatsa ruled from Gujarāt to Bengal. About 800 he was defeated and driven into Mārwār by the rising power of the Rāshtrakūta clan. The Gūrjaras, however, as we learn from inscriptions at Gwalior and elsewhere, again advanced and recovered their lost dominion as far east as Gwalior, under Rāmabhadra. His successor Bhoja I (not to be confounded with the famous Paramāra chief who lived two centuries later) recovered all the lost territory and acquired fresh lands in the Punjab.

Two branches of the Gūrjaras, who became known later as the Parihār and Paramāra Rājput clans, obtained at this time the possession of Bundelkhand and Mālwā respectively, holding them in fief under their Gūrjara overlord. After the death of Bhoja I (885), the Gūrjara power declined, owing to the rising power of the Chandels in Bundelkhand, the Kalachuris along the Narbadā, and the Rāshtrakūtas. Taking

advantage of their difficulties, the Paramāra section in Mālwā threw off their allegiance (915); and Central India was then divided between the Paramāras in Mālwā, with Ujjain and Dhār as their capitals, the Parihārs in Gwalior, the Chandels in Bundelkhand, with capitals at Mahobā and Kālinjar, and the Chedis or Kalachuris who held much of the present Rewah State. The history of this period is that of the alliances and dissensions of these clans, which in Central India lasted through the early days of the Muhammadan invasion, until they eventually came under the Moslem yoke in the thirteenth century.

When Mahmūd of Ghazni commenced his raids, the Rājputs were the rulers everywhere. Dhanga (950–99), the Chandel of Bundelkhand, had already fought with Jaipāl of Lahore against Sabuktagīn at Lamghān (988). In his fourth expedition Mahmūd was opposed at Peshāwar by Anand Pāl of Lahore and a confederate Hindu army; and among those who fought round Anand Pāl's standard were the Tonwar chief of Gwalior, the Chandel prince, Ganda (999–1025), and the Paramāra of Mālwā (either Bhoja or his father Sindhurājā). By the capture of Kanauj in 1019, Mahmūd opened the way into Hindustān, and in 1021 GWALIOR fell to him. After Mahmūd's death (1030), Central India was not again visited by the Muhammadans till the end of the twelfth century; but from the time of his death until the appearance of Kutb-ud-dīn the history of Central India is that of the incessant petty wars which went on between the various Hindu clans. Paramāra, Chandel, Kalachuri, and Chālukya (of Gujarāt) waged war against one another, gaining temporary advantage each in turn, but exhausting their own resources and smoothing the way for the advance of the Muhammadans.

In 1193 Kutb-ud-dīn entered Central India and took Kālinjar for Muhammad Ghorī, and later (1196) Gwalior, of which place Shams-ud-dīn Altamsh was appointed governor. In 1206 Kutb-ud-dīn became king of Delhi, and for the first time a Muhammadan king ruled India from within, and held in more or less subjection all the country up to the Vindhyas. A period of confusion followed his death (1210), during which the Rājputs of Central India regained the greater part of their possessions.

Altamsh finally succeeded to the Delhi throne (1210–36), and in the twenty-first year of his reign retook Gwalior from the Hindus after a siege of eleven months (1232). He then proceeded to Bhīlsa and Ujjain, sacked the latter place and destroyed the famous temple of Mahākāl, sending its idol to Delhi (1235). He was followed by a succession of weak kings, during whose reigns (1236–46) the Hindu chiefs were left much to themselves. In 1246 Nāsir-ud-dīn succeeded. Like the others, he was a weak ruler; but his reign is of importance on account of the energetic action of his minister Balban, who took NARWAR in 1251, and, succeeding his master in 1266, kept the Hindu chiefs

in subjection, and ruled with a firm hand, so that it was said 'An elephant avoided treading on an ant.'

On Balban's death the rule passed to the Khiljīs under Jalāl-ud-dīn, who (1292) entered Mālwā and took Ujjain, and after visiting and admiring the temples and other buildings, burnt them to the ground, and, in the words of the historian, thus 'made a hell of paradise.' About this time Alā-ud-dīn, then governor of Bundelkhand, took BHĪLSA and MĀNDU (1293).

In Muhammad bin Tughlak's reign (1325–51) a severe famine broke out (1344); and the king resting at Dhār on his way from the Deccan found that 'the posts were all gone off the roads, and distress and anarchy reigned in all the country and towns along the route,' while the anarchy was augmented by the dispatch of Azīz Hamīr as governor of Mālwā, who by his tyrannous actions soon drove all the people into rebellion. In the time of Fīroz Shāh (1351–88) the process of disintegration commenced, which was completed in the time of Tughlak Shāh II. The land was divided into provinces governed by petty rulers, Mālwā, Māndu, and Gwalior being held by separate chiefs.

The history of Central India now becomes largely that of Mālwā. The weak Saiyid dynasty, who held the Delhi throne from 1414 to 1451, were powerless to reduce the numerous chiefs to order, and Mahmūd of Mālwā even made an attempt to seize the Delhi throne (1440), which was, however, frustrated by Bahlol Lodī. It is worth while noting, in regard to this weakening of Musalmān rule, how Hindu and Muhammadan had by this time coalesced. We find the Hindu chiefs employing Muhammadan troops, and Mahmūd of Mālwā enlisting Rājputs. Some sort of order was introduced under the Lodīs (1451–1526); but they had no great influence, except in the country immediately round Delhi, though Narwar was taken by Jalāl Khān, Sikandar's general (1507), and Ibrāhīm Lodī captured the Bādalgarh outwork of Gwalior (1518).

The emperor Bābar (1526–30) notes in his memoirs that Mālwā was then the fourth most important kingdom of Hindustān (being a part of Gujarāt under Bahādur Shāh), though Rānā Sanga of Udaipur had seized many of the provinces that had formerly belonged to it. Bābar's forces took Gwalior (1526) and Chanderī (1527), and later he visited Gwalior (1529), of which he has left an appreciative and accurate account. Humāyūn defeated Bahādur Shāh at Mandasor (1535), but in 1540 was himself driven from India by Sher Shāh.

Sher Shāh, the founder of the Sūri dynasty (1539–45) was a man of unusual ability, and soon reduced the country to order. He obtained possession of Gwalior, Māndu, SĀRANGPUR, Bhīlsa, and RAISEN, (1543–4), making Shujāat Khān, his principal noble, viceroy in Mālwā. Islām Shāh, Sher Shāh's successor, made Gwalior the capital instead

of Delhi, and it continued to be the chief town during the brief reigns of the remaining kings of this dynasty.

Humāyūn regained his throne in 1555, but died within the year, and was succeeded by Akbar, who in 1558 entered Central India, and taking Gwalior, proceeded against Bāz Bahādur, son of Shujāat Khān, then holding most of Mālwā, and finally drove him out in 1562. Ujjain, Sārangpur, and Sīprī were soon in Akbar's hands, thus completing his hold on Mālwā, while in 1570 Kālinjar was surrendered by the Rewah chief, and all Central India thus came under his sway. In 1602 Bīr Singh Deo of ORCHHĀ, in Bundelkhand, murdered Abul Fazl at the instigation of prince Salīm (Jahāngīr), and in revenge Orchhā was taken.

In Shāh Jahān's reign, Jhujhār Singh, the Rājā of Orchhā, rebelled and was driven from his State (1635), which formed part of the empire till 1641.

In 1658, during the struggle for the throne, Aurangzeb and Murād defeated Jaswant Singh at Dharmatpur, now Fatehābād, near Ujjain, and thus opened the road to Agra. During this period the Marāthās, who had already begun to desert the plough for the sword in the time of Jahāngīr, first crossed the Narbadā (1690), and plundered the Dharampurī district (now in Dhār), while in 1702–3 Tārā Bai sent expeditions to plunder as far as Sironj, Mandasor, and the *Sūbah* of Mālwā and the environs of Ujjain.

Though the Marāthās had entered Mālwā as early as 1690, it was not till the reign of Muhammad Shāh (1719–48) that they obtained a regular footing in this part of India. So rapidly did their power increase under the tacit, if not active, support of the Hindu chiefs, that in 1717 Marāthā officers were collecting *chauth* under the very eyes of the imperial *sūbahdārs*. In 1723 the Nizām, at this time governor of Mālwā, retired to the Deccan; and the Peshwā Bājī Rao, who had determined to destroy the Mughal power, at once strengthened his position across the Narbadā by sending his generals (1724), notably Holkar, Sindhia, and the Ponwār, to levy dues in Mālwā. In 1729 the oppressive action of Muhammad Khān Bangash in Bundelkhand induced Chhatarsāl of PANNĀ to call in the aid of the Peshwā, who thus obtained a footing in eastern Central India. The Peshwā's power was finally confirmed in Mālwā in 1743, when he obtained, through the influence of Jai Singh of Jaipur, the formal grant of the deputy-governor ship of Mālwā. In 1745, at the time of Rānojī Sindhia's death, the whole of Mālwā, estimated to produce 150 lakhs of revenue, was, with small exceptions, divided between Holkar and Sindhia. Lands yielding 10 lakhs were held by various minor chiefs, of whom Anand Rao Ponwār (Dhār) was the most considerable. From this time Central India remained a province of the Peshwā until the fatal battle of

Pānīpat in 1761 broke the power of the Marāthā confederacy, and Central India was divided between the great Marāthā generals. Three years later the battle of Buxar made the Mughal emperor a pensioner of the East India Company; and though they had a severe struggle with the great Central India chiefs, Holkar and Sindhia, the British henceforth became the paramount power in India.

Comparatively speaking, Central India was at peace from 1770 to 1800. The territories of Holkar were, during most of this period, under Ahalyā Bai (1767–95), whose just and able rule is proverbial throughout India, while till 1794 the possessions of Sindhia were controlled by the strong hand of Mahādjī. The great influence of Tukojī Holkar (1795–7), who succeeded Ahalyā Bai, restrained young Daulat Rao Sindhia and kept things quiet, till on Tukojī's death (1797) the keystone was removed and the structure collapsed. Central India was soon plunged into strife, and all the advantages which the land had derived from forty years of comparative peace were lost in a few months.

Troubles in Bombay had necessitated proceedings against Mahādjī Sindhia, who was intimately concerned with them; and Gwalior was taken by Major Popham (1780), and Ujjain threatened by Major Camac, which caused Sindhia to agree to terms (October, 1781). The next year, Sindhia's independence of the Peshwā was recognized in the Treaty of Sālbai (1782), and he at once commenced operations in Hindustān. Mahādjī Sindhia died in 1794, and his successor, Daulat Rao, had by 1798 become all-powerful in Central India, when the appearance at this moment of Jaswant Rao Holkar, with the avowed intention of reviving the fallen fortunes of his house, soon plunged the country into turmoil. Now commenced that period of unrest, still known to the inhabitants of Central India as the 'Gardī-kā-wakt,' which reduced the country to the last state of misery and distress. A clear proof of the anarchy which prevailed in Central India at this time is given by the ease with which Jaswant Rao Holkar was able in the short space of two years to collect a body of 70,000 men—Pindāris, Pathāns, Marāthās, and Bhīls—who were tempted to join his standard solely by the hope of plunder, and with whose assistance he proceeded to devastate the country. The capture of Indore (1801) and wholesale massacre of its inhabitants by Sarje Rao Ghātke, the father-in-law of Sindhia, was no check on Holkar, whose victory at Poona (1802) sent him back with renewed energy to ravage Mālwā.

The non-interference system pursued by Cornwallis, followed by Barlow's policy of 'disgrace without compensation, treaties without security, and peace without tranquillity,' allowed matters to pass from bad to worse. To the hordes which plundered under Amīr Khān and Jaswant Rao Holkar were added the bodies of irregular horse from

British service which had been indiscriminately disbanded at the end of Lord Lake's campaign. In 1807 Bundelkhand was in a state of ferment. Parties of marauders scoured the country, and numerous chiefs, secure in their lofty hill forts, defied the British authority. As soon, however, as they saw that the policy had changed and that the British intended to interfere effectively, most of them surrendered, but the chiefs of Kālinjar and AJAIGARH only submitted after their forts had been taken by assault. In 1812 the Pindāris began to increase to an alarming extent; and supported by Sindhia and Holkar and aided by Amīr Khān, their bands swept Central India from end to end, passing to and fro between Mālwā and Bundelkhand, and even crossing the border into British India.

At this juncture, Lord Hastings was appointed Governor-General. Ten years of practically unchecked licence had enormously increased the numbers of the marauders. About 50,000 banditti were now loose in Central India, and the confusion they produced was augmented by the destructive expedients adopted by Holkar, who sent out *sūbahdārs* to collect revenue, accompanied by large military detachments, which were obliged to live on the country, while at the same time extorting funds for the Darbār. By 1817 the disorganization had reached a climax. At last Lord Hastings received permission to act. Rapidly forming alliances with all the native chiefs who would accept his advances, he ordered out the three Presidency armies, which gradually closed in on Central India. Sindhia, who had originally promised his aid, now showed signs of wavering, but a rapid march on Gwalior caused him to come to terms, while Amīr Khān at once submitted, and dismissed his Afghān followers. The army of Holkar, after murdering the Rānī, marched out to oppose the British, but was defeated at MEHIDPUR (1817). The Pindāri leaders, Karīm, Wasīl Muhammad, and Chītū, were either forced to surrender or hunted down, and the reign of terror was over.

These military and political operations were remarkable alike for the rapidity with which they were executed and for the completeness of their result. In the middle of October, 1817, the Marāthās, Pindāris, and Pathāns presented an array of more than 150,000 horse and foot and 500 cannon. In the course of four months this formidable armament was utterly broken up. The effect on the native mind was tremendous, and a feeling of substantial security was diffused through Central India. So sound, moreover, was the settlement effected, under the superintendence of Sir John Malcolm, that it has required but few modifications since that time.

The next few years were spent in settling the country and repopulating villages. One of the principal means of achieving this was by granting a guarantee to small landholders that their holdings would be

assured to them, on the understanding that they assisted in pacifying the districts in which they lived. This guarantee, which secured the small Thākurs from absorption by the great Darbārs, acted like magic in assisting to produce order. In 1830 operations were commenced against the Thags, whose murderous trade had been greatly assisted by the late disorder, but who, under Colonel Sleeman's energetic action, were soon suppressed.

Affairs in the State of Gwalior now became critical. Daulat Rao Sindhia had died childless in 1827, and two successive adoptions of young children followed. Disputes arose between the regent and the Rānī. The army sided with the Rānī, and the state of affairs became so serious that the British Government was obliged to send an armed force. Fights took place on the same day at MAHARĀJPUR and Panniār (December 29, 1843), in which the Gwalior army was destroyed. The administration of the State was reorganized and placed under a Political officer, whose authority was supported by a contingent force of 10,000 men.

The various sections which now compose the Central India Agency were at first in charge of separate Political officers. Residents at Indore and Gwalior dealt direct with the Government of India, and Bundelkhand and Baghelkhand were independent charges. In 1854 it was decided to combine these different charges under the central control of an Agent to the Governor-General. The Bundelkhand and Baghelkhand districts were added to Mālwā, and the whole Agency so formed was placed under Sir R. Hamilton, at that time Resident at Indore, as Agent to the Governor-General for Central India.

The first serious outburst during the Mutiny in Central India took place on June 14, 1857, among the troops of the Gwalior Contingent at MORĀR, whose loyalty had been doubted when the first signs of trouble appeared. Sindhia was still only a youth, but luckily there were present at his side two trusty councillors, Major Charters Macpherson, the Resident, and Dinkar Rao, the minister. Major Macpherson, before he was forced to leave Gwalior, managed to impress on Sindhia the fact that, however bad things might appear, the British would win in the end, and that it was above all necessary for him to do his best to prevent the mutinous troops of the Contingent leaving Gwalior territory, and joining the disaffected in British India.

On June 30 the Indore State troops sent to guard the Residency mutinied, and Colonel Durand, Officiating Agent to the Governor-General, was obliged to retire to Sehore and finally to Hoshangābād. Outbreaks also took place at Nīmach (June 3), Nowgong (June 10), Mhow (July 8), and Nāgod (September).

In October, 1857, the Central India campaign commenced with the capture of Dhār (October 22). In December Sir Hugh Rose took

command, and ousting the pretender Fīroz Shāh, who had set up his standard at Mandasor, took the forts of CHANDERĪ, JHĀNSI (March, 1858), and GWALIOR (June). The two moving spirits of the rebellion in Central India were the ex-Rānī of Jhānsi, Lachmī Bai, and Tāntiā Topī, the Nāna Sāhib's agent. The Rānī was killed fighting at the head of her own troops in the attack on Gwalior, and Tāntiā Topī after a year of wandering was betrayed by the Rājā of PĀRON and executed (April, 1859). The rising thus came to an end, though small columns were required to operate for a time in certain districts.

After the excitement of 1857–9 had died away, the country soon returned to its normal condition, and the history of Central India from this time onwards is a record of steady general improvement. Communications have been improved by the construction of telegraphs, high roads, and railways, and by the development of a postal system, while trade has been facilitated by the abolition of transit dues. Closer supervision has led to great reforms in the systems of administration in the various States, which were everywhere crude and unsatisfactory. A regular procedure has been laid down for the settlement of boundary disputes, and education has been fostered. Still, the course of progress has not been uninterrupted. Severe famines, and more lately plague, have ravaged the country from time to time, and cases have occurred where mismanagement and even actual crime have led to the removal of chiefs.

The archaeological remains in the Agency are considerable, including old sites, buildings of historical and architectural importance, ancient coins, and epigraphic records. Little is really known as yet about most of the places, which require more systematic investigation, especially ancient sites, such as those of Old UJJAIN and Beshnagar. Many of the old Hindu towns have since been occupied by Muhammadans, as for instance DHĀR, MANDASOR, NARWAR, and SĀRANGPUR, and are consequently no longer available for thorough research, though, as at Dhār and Ujjain, chance sometimes brings to light an old Hindu record which has been used in constructing a Muhammadan building.

The principal places at which remains and buildings of interest exist are AJAIGARH, AMARKANTAK, BĀGH, BARO, BARWĀNI, BHOJPUR, CHANDERĪ, DATIĀ, DHAMNĀR, GWALIOR, GYĀRASPUR, KHAJRĀHO, MĀNDU, NĀGOD, NAROD, NARWAR, ORCHHĀ, PATHĀRĪ, REWAH, SĀNCHĪ, SONĀGIR, UDAYAGIRI, UDAYAPUR, and UJJAIN.

Ancient coins have been found in many of the old sites, ranging from the early punch-marked series to those of the local chiefs and the Mughals. The epigraphic records found are also numerous. The earliest with dates are those inscribed on the railings and gates of the *stūpas* at Sānchī and Bhārhut, belonging to the first years of the Christian era. Next in chronological order follow the Gupta inscrip-

tions, of which the earliest is dated in the year 82 of the Gupta era (A.D. 401), the latest on some copperplates from Ratlām of the year 320 (A.D. 640). A record from Mandasor, dated in the year 493 of the Mālwā rulers (corresponding to A.D. 436), is important, as in conjunction with other similar records it has been instrumental in proving the identity of the era of the lords of Mālwā with the Vikrama Samvat of the present day.

The various records, both inscriptions on stone and copper-plate land grants, have afforded much information regarding the history of the dynasties which from time to time ruled in Central India, notably the Guptas of Magadha of the fourth to the sixth century, the Rājput chiefs—the Paramāras of Mālwā, the Chandels of Bundelkhand, the Kalachuris of Baghelkhand—the rulers of Kanauj of the ninth to the fifteenth century, and the subsequent Muhammadan rulers.

Central India is unusually rich in architectural monuments, especially of Hindu work, which afford probably as complete a series of examples of styles from the third century B.C. to the present day as can be seen in any one province in India. In Muhammadan buildings the Agency is less rich.

The earliest constructions in Central India date from the third century B.C. and are Buddhist. They include *stūpas* or monumental tumuli, often containing relics of famous teachers of that faith, *chaitya* halls or churches, and *vihāras* or monasteries. A considerable number of *stūpas* are still standing in Central India, many being grouped round BHĪLSA, and the finest of the series being the Sānchī Tope. This and another, which formerly stood at Bhārhut in NĀGOD, were erected in the third century B.C. Of the *chaitya* hall numerous rock-cut examples exist, but none is of great age. The oldest *chaitya* hall in Central India is represented by the remains standing to the south of the Sānchī Tope, which are of special interest as constituting the only structural building of its kind known in all India. The rock-cut examples which date from about the sixth to the twelfth century exemplify the transitions through which this class of building passed, those at BĀGH and DHAMNĀR being about two centuries older than those at Kholvi, a place situated close to Dhamnār, but just outside the Central India Agency in the State of Jhālawār. The *vihāra* or monastery is also met with at these places, being in some cases attached to a *chaitya* hall, forming a combined monastery and church. Probably monolithic pillars formerly stood beside most of these three classes of building; the remains of one bearing an edict of Asoka were found at Sānchī.

The buildings which follow these chronologically have been not very happily named Gupta, as the name has obscured their connexion with those just dealt with. They are represented by both rock-cut and structural examples, the former existing at UDAYAGIRI, and at Mārā

in REWAH. In two of the caves at the first place inscriptions of A.D. 401 and 425 have been found, but many of the caves may well be older. The structural temples of this class are numerous, those at SĀNCHĪ, Nāchna in AJAIGARH, Paroli in GWALIOR, and Pataini Devī in NĀGOD being good examples, while many remains of similar buildings lie scattered throughout the Agency.

Though many buildings of the so-called Jain style have disappeared, the GYĀRASPUR temples, the earliest buildings at KHAJRĀHO, the later temples at the same place, and the UDAYAPUR temple give a sufficiently consecutive chain leading up to the modern building of the present day with its perpendicular spire and square body.

Numerous examples of this mediaeval style (of the eighth to the fifteenth century) lie scattered throughout Central India in various stages of preservation, those at AJAIGARH, BARO, BHOJPUR, and GWALIOR being important. The later developments of the sixteenth century are to be seen at ORCHHĀ, SONĀGIR, and DATIĀ, and of the seventeenth century to the present day in almost any large town. The modern temple as a rule has little to recommend it. The exterior is plain and lacks the light and shade produced by the broken surface of the older temples, and the general effect is marred by the almost perpendicular spire, the ugly square body often pierced by foliated Saracenic arches and surmounted by a bulbous ribbed Muhammadan dome; while all the builder's ingenuity appears to be lavished on marble floors, tinted glass windows, and highly coloured frescoes. Temples of this class abound, those at Maksi in Gwalior and several in Indore city affording good examples of the modern building. The *chhatrī* of the late Mahārājā Sindhia at Gwalior is perhaps as good an example of modern work as any.

Muhammadan religious architecture is not so well represented in Central India. The earliest building of which the date is certain is the mosque near Sehore, built by a relative of Muhammad bin Tughlak in 1332. The most important buildings are those at DHĀR and MĀNDU, where numerous mosques, tombs, and palaces were erected by the Mālwā kings between 1401 and 1531. These are in the Pathān style, distinguished by the ogee pointed arch, built with horizontal layers of stone and not in radiating courses, which shows that they are Muhammadan designs executed by Hindu workmen. These buildings are ordinarily plain; and the pillars, when not taken directly from a Hindu or Jain edifice, are simple and massive, the Jāma Masjid at Māndu being a magnificent example of this style. Scattered throughout Central India are numerous small tombs in the Pathān style, to be seen in almost any place which Muhammadans have occupied.

Of Mughal work the best example is the tomb of Muhammad Ghaus in Gwalior, which is a very fine building in the early Mughal style of

Akbar and Jahāngīr, with the low dome on an octagonal base, and a vaulted roof ornamented with glazed tiles.

Of modern Muhammadan work the only example of any size is the new Tāj-ul-Masājid at Bhopāl, not yet completed. The plan is that of the great mosque at Delhi, though, owing to the weakness of the foundations, the flanking domes have been omitted. The general effect is fine ; but the carving is poor, being too slight for the general design, and the pillars, which are massive, would have been better without it. All the modern buildings have the heavily capped and ribbed dome common to the later Mughal style. Muhammadan buildings also exist at SĀRANGPUR, UJJAIN, GWALIOR, GOHAD, NARWAR, and CHANDERĪ. Muhammadan domestic architecture is not represented by any important edifices, except the palaces at Māndu and the water palace at Kāliadeh near Ujjain.

Of the domestic architecture of the Hindus there are few examples of note. The finest building of this class is the fifteenth-century palace of Rājā Mān Singh at Gwalior, its grand façade being one of the most striking features of the old fort, while at ORCHHĀ and DATIĀ there are two majestic piles, erected by Rājā Bīr Singh Deo of Orchhā in the seventeenth century.

There is little modern work that merits much attention. In most cases, such as the palaces erected by chiefs of late years, either small attention has been paid to the design, or else the Hindu, Muhammadan, and European styles have been mingled, so as to produce a sense of incongruity and unfitness, as in the mosque-like palace at Ujjain. The most noteworthy building of this class is the Jai Bilās palace at Gwalior, which is designed on the model of an Italian *palazzo*, but is marred by the unfortunate use of Oriental ornamental designs ; the college and hospital at the same place are more successful. The ordinary dwelling-houses of the well-to-do have few pretensions to style, though a marked improvement is noticeable in the increased number of windows introduced. Of European buildings, the Residency House at Indore and the Daly College are the only structures of any size, but architecturally they have nothing to recommend them. The most picturesque buildings are the churches at SEHORE and AGAR.

Throughout Central India there are a large number of *ghāts* (bathing-stairs) and dams, some of considerable age and great size. The colossal dams at BHOJPUR are the finest, but many others exist, as at UJJAIN, MAHESHWAR, and CHARKHĀRI. Bundelkhand is especially rich in them. Examination shows that they were built to form tanks, not for irrigation, but as adjuncts to temples, palaces, or favourite resorts. Their employment for irrigation is invariably a later development.

The population of Central India at the three regular enumerations

was: (1881) 9,261,907, (1891) 10,318,812, (1901) 8,628,781[1]. The average density (109 persons per square mile) varies markedly in the different natural divisions. In the low-lying tract, forming the eastern part of the Agency, the density is 172 per square mile, in the plateau 102, and in the hilly tracts only 74.

Population.

The Agency contains 63 towns with 5,000 or more inhabitants, besides 17 of which the population through famine and other causes had fallen below that figure since 1891. Of the towns, 49 are situated on the western side of the Agency, and only 14 in Bundelkhand and Baghelkhand. The largest city is Lashkar, the modern capital of Gwalior, with a population of 89,154; Indore (86,686) and Bhopāl (77,023) come next in importance. Of the 33,282 villages, 30,058 have a population of less than 500, the average village containing only 230 persons. The size of the village is greater in the low-lying tract, where the average rises to 313. The village in Central India, when of fair size, consists as a rule of a cluster of small habitations surrounding a large building, the home of the Thākur who holds the land.

The population fell by 16 per cent. during the last decade, owing mainly to the two severe famines of 1896–7 and 1899–1900. The decrease took place, however, only in the rural population, the urban population rising by 18 per cent., due chiefly to the opening of new railways and consequent increase of commerce.

Central India gains little from immigration. Of the total population enumerated in 1901, 92 per cent. were born within the Agency. This fact is supported by the language figures, which show 93 per cent. speaking local dialects. Such immigration as takes place comes chiefly from the United Provinces, and flows into Bundelkhand and Baghelkhand, amounting to 47 per cent. of the total immigration, Rājputāna supplying 26 per cent. On the whole, Central India gained about 90,000 persons as the net result of immigration and emigration. Internally there is very little movement.

The age statistics show that the Jains, who are the richest and best-nourished community, live the longest, while the Animists and Hindus show the greatest fecundity. The age at marriage varies with locality, the same sections of the community in different parts marrying their children at somewhat varying periods. Most males under five years of age are married in the low-lying tract, while the statistics show that child-marriage is becoming popular among the Bhīls and allied tribes.

No vital statistics are recorded in Central India, but from the census figures it is apparent that infant mortality increased in the period

[1] This figure includes the population of parts of Rājputāna, but excludes that of portions of Central India States in other Agencies, &c., see p. 322.

1895–9, which involved two famines and several bad agricultural years. Plague has also very materially affected the population.

Except for an occasional local outbreak of cholera and small-pox, Central India was free from serious epidemics till 1902, when plague appeared. The first case (except for an isolated instance in 1897) was reported in 1903 from the village of Kasrāwad in the Nimār district of Indore State, and the epidemic spread thence to Ratlām, and finally to Indore city, the Residency area, and Mhow cantonment. The registration of deaths from this cause was very incomplete, but an idea of its virulence may be gained from the figures for these places. In Indore city the deaths recorded in three months during 1904 were 10 per cent. of the population; in the Residency area the total number of deaths in 1903 was 966, or 9 per cent.; in Mhow, 5,136, or 14 per cent. Other places of importance which have suffered from plague are Lashkar, Jaora, Bhopāl, Sehore, Dewās, Nīmach, Mandasor, Shājāpur, and Agar. In the districts the attacks were less violent, as a rule, though here and there individual villages were very severely visited. The actual loss of life, added to the emigration consequent on fear of infection, has seriously affected agricultural conditions in Mālwā by reducing the population. Inoculation was at first looked on with the greatest suspicion, but ultimately a large number of persons were treated.

Female infanticide in Central India was first reported on by Mr. Wilkinson in 1835. He found that not less than 20,000 female infants were yearly made away with in Mālwā alone. No attempt at concealing the practice was made, and a careful examination showed that 34 per cent. of girls born were killed. In 1881 attention was called to the prevalence of this custom in Rewah, and special measures were taken to cope with it. The census figures of 1901, however, give no proof that the custom is now a general one.

The total number of persons affected by infirmities in Central India in 1901 was 3,180 males and 2,272 females. This included 5 males and 2 females insane, 19 male and 13 female deaf-mutes, 41 males and 35 females blind, 6 male and 4 female lepers, in every 100,000 of the population. Insanity is more prevalent in the plateau and low-lying tracts than in the hills, a fact possibly due to the inhabitants of the jungle tracts being but little addicted to the use of opium.

Central India in 1901 contained 4,428,790 males and 4,199,991 females. The ratio of women to 1,000 men was 896 in 1881, 912 in 1891, and 948 in 1901, being 950 in towns and 920 in villages. Of the natural divisions, the hilly tracts have the most females, about 9,900 to every 10,000 males, while the plateau and low-lying divisions have about 9,400 and 9,300 respectively. The hilly tracts thus contain between 5 and 6 per cent. more women than the other two tracts. The

figures for the different political charges vary; Baghelkhand alone shows an excess of females.

Marriage and cohabitation are not simultaneous, except among the animistic tribes of the hilly tracts. Out of the total population in 1901, 2,080,562 males and 2,066,717 females were married, giving a proportion of 9,933 wives to 10,000 husbands. In a country where marriage is considered obligatory it is interesting to note that 44 per cent. of the males of all ages and 31 per cent. of the females are unmarried. In the widowed state a large difference is noticeable between males and females, the prohibition to remarry raising the figure for females to 20 per cent., that for males being 9 per cent. Most men between 20 and 30 are married. No great rise takes place in the number of married till after fifteen years of age, the difference between the 15–20 and 20–40 periods being about 2,700 persons per 10,000. Girls marry earlier. The female figures are about double those of the male in each age-period until the ages 20 to 40 are reached, when the figures become more equal. The relative ages of girl-marriage in the several natural divisions are: on the plateau, Hindus 12 years and 4 months, Musalmāns 13 years and 6 months, and Jains 12 years and 6 months; in the low-lying tract, Hindus and Musalmāns 12 years, and Jains 11 years; in the hilly tracts, Hindus 12 years and 6 months, and Animists 14 years. Polygamy is comparatively rare and polyandry is unknown in the Agency. Divorce is current among both Hindus and Muhammadans, according to their respective customs, while widow remarriage prevails among Muhammadans generally, and also among the inferior classes of Hindus, such as Gwālas, Ahīrs, Gūjars, and Korīs, and among the jungle tribes. Widow remarriage is more common in the low-lying tract than on the plateau. The statistics of civil condition in 1901 are shown below:—

	Persons.	Males.	Females.
Unmarried . .	3,251,778	1,961,018	1,290,760
Married . .	4,147,279	2,080,562	2,066,717
Widowed . .	1,229,724	387,210	842,514
Total	8,628,781	4,428,790	4,199,991

Save for a few traces of the Dravidian tongues, which linger among the hill tribes, the languages spoken in Central India belong exclusively to the Indo-Aryan branch of the great Indo-European family, and, moreover, fall entirely in the Western and Mediate groups of this branch. There appears to be little doubt that in earlier days the prevailing tongues of Central India belonged to the Dravidian or Mundā families, the aboriginal tribes who spoke these tongues having been gradually absorbed into the ranks of the northern invaders, or driven as refugees

to the fastnesses of the Vindhya range. As is usual in such cases, the mother tongue has been lost, and only a small number of Gonds in the hills south of Bhopāl still show traces of Dravidian forms in their speech. Most of the tribes speak a patois founded on the vernacular prevailing in their district, such as Mālwī or Baghelī. The Bhīls also, who are probably of Mundā stock, have so effectually lost their ancient speech that only a small residuum of words remains, amounting to about 6 per cent., which cannot be identified as Aryan. Their present dialect is a bastard tongue compounded of Gujarātī and Mālwī.

Most of the dialects spoken in Central India belong to Western Hindī, which includes (besides Bundelī) the everyday language of the educated resident Hindus, and also the more Persianized Urdū chiefly used by the employés in Government offices and the ruling class in Muhammadan States. Bundelī is spoken, as its name implies, by the peasantry of Bundelkhand. About 29 per cent. of the population speak unspecified dialects of Western Hindī, of whom 50 per cent. reside in Mālwā.

Two of the Rājasthānī dialects, Mālwī (with its derivatives Rāngrī and Nimārī) and Mārwārī, are spoken in Central India by large numbers of the people. The Mālwī dialect is spoken in the country of which Indore is the centre. It extends eastwards to the borders of Bhopāl, where it meets Bundelī, while westwards it crosses into Udaipur in Rājputāna, touching on the south the Bhīl and Gond dialects, and on the north the Braj Bhāsha of Muttra, which is spoken round Gwalior. The Rāngrī dialect is a form of Mālwī largely mixed with Mārwārī words. The Nimārī dialect, which is met with in Nimār, is a mixture of Bhīlī, Khāndeshī, and other tongues, with Mālwī as a basis. Mārwārī, the most important of the Rājasthānī tongues, is brought into Central India principally by the merchant community, most of whom come from Western Rājputāna. It is the only dialect of this language with a literature, being largely employed in the Rājput bardic chronicles. The Rājasthānī dialects are spoken by 20 per cent. of the total population, and by 66 per cent. of the people of Mālwā.

Special interest attaches to Eastern Hindī, as an early form of it was employed by Mahāvīra (500 B.C.), the Jain teacher, in expounding the tenets of his religion, whence it became later the language of the canonical books of the Digambara Jains. Of its three dialects, Awadhī and Baghelī are met with in Central India, the latter being locally of more importance as the chief dialect of Baghelkhand. There is a considerable literature in Baghelī, which has always been fostered by the chiefs of Rewah, though the numerous works produced are not creative in character, but rather the writings of scholars and critics about poets, than of actual poets. The dialects of this language are met with only in Baghelkhand, where 99 per cent. of the population employ them.

The chief forms of speech used by the majority of the people are shown below:—

Western Hindī	Bundelī	2,206,458
	Unspecified	2,520,604
Rājasthānī	Rāngrī	811,338
	Nimārī	177,945
	Mālwī	660,045
Eastern Hindī	Baghelī	1,401,013
Bhīl dialects		222,231
	Total	7,999,634

The elements which make up the population of Central India are very diverse, as indicated in the brief sketch of the history given above. The Brāhmans of Central India are essentially the same as those found elsewhere, and, as usual, each separate branch forms a local endogamous group. The Mālwī, Nimārī, and Srīgaur Brāhmans of Mālwā, the Jijhotias of Bundelkhand, and the Dandotias of Gwalior, may be cited as instances. These groups have their own institutions, and, while claiming relationship to the parent stock in Northern India, cannot intermarry or eat with them. In appearance the local Brāhmans are men of good features and light colour, less thick-set in build than those of the Deccan. The local Brāhmans are not an educated class, their chief pursuit being agriculture, some also engaging in commerce. At the last Census Brāhmans numbered 888,320, or 13 per cent. of the population, among whom were 53,781 Jijhotias and 12,582 Srīgaurs.

Of the second orthodox division of Hindu castes, many are members of the great Rājputāna houses. The Sesodias of Udaipur are represented by the Rānās of Barwānī, the Rāthors of Jodhpur by the chiefs of Ratlām, Sītāmau, and Sailāna, the Chauhāns of Ajmer by the Khīchīs of Rāghugarh and Khilchipur, the Kachwāhas of Jaipur by the Rājā of Pāron, and the Paramāras, once lords of Mālwā, by the Umats of Rājgarh and Narsinghgarh, and more distantly again by the Ponwār Marāthās of Dhār and Dewās. The chief local groups of Rājputs are the Baghelas of Rewah, descended from the Gujarāt branch, the Umats of Mālwā, the Bundelās, the Ponwārs, and the Dhandheras of Bundelkhand. There is a greater diversity of feature and colouring among the Rājputs than among either the Brāhman or Baniā classes, even omitting the Rājputs of admittedly mixed descent. The Marāthā house of Sindhia and the Ponwārs claim Rājput origin. There are, besides these, the Bhilāla Bhūmiās in the hilly tracts of Bhopāwar, who are chiefs of mixed Rājput descent. Altogether 658,267 were returned in 1901 as Rājputs, and 34,305 as Marāthās.

Among the trading class, as among the Brāhmans, certain local groups are met with, but generally speaking there is little to note about them. The most influential section of the Hindu commercial com-

munity are the Mārwārīs of Rājputāna, who maintain connexion with their original home too closely to be reckoned as local groups, even after long residence. Under the head of Baniā 240,807 persons were returned, among whom were 41,637 Agarwāls, chiefly in Gwalior, Bundelkhand, and Mālwā, and 19,935 Mahesris in Mālwā.

The type of the agricultural population differs in the eastern and western sections. The peasants of Bundelkhand are of shorter stature and sturdier build and darker colour than those of Mālwā. The chief classes in Bundelkhand and Baghelkhand (including in this term the country round and to the east of Gwalior city) are Ahīrs (326,157), Gadariās (149,230), Kāchhīs (353,095), and Lodhīs (219,637); while in Mālwā the Gūjars (167,179), Mālīs (73,918), and Kunbīs (56,458) predominate.

Classified by religion, the inhabitants of Central India are chiefly Hindus, Animists, Muhammadans, or Jains, of whom the first two are the most numerous. According to the Census of 1901, 81 per cent. were Hindus, 11 per cent. Animists, 6 per cent. Muhammadans, and 1 per cent. Jains. Other religions numbered 11,144, of whom 8,114 were Christians, including 3,715 natives, chiefly the famine waifs supported by Christian missions; Sikhs numbered 2,004, almost all soldiers in British regiments; Pārsīs 1,002, and Jews 24, both mainly residents of British cantonments and stations.

The term Hindu includes every shade of this religion from the orthodox Brāhman to the lowest castes, whose religion is three parts animistic. Hindus as a rule profess special devotion to Vishnu or Siva, the two chief persons of the Hindu triad, or to a Saktī or female counterpart (usually of Siva). The numbers professing these forms of worship were Vaishnavas (worshipping Vishnu), 1,883,618; Smārtas (worshipping the triad), 1,069,137; Sāktas (worshipping Devī, the female counterpart of Siva), 759,297; and Saivas (worshipping Siva), 737,229.

The Animists (992,458), all members of jungle tribes such as the Bhīls, worship certain spirits supposed to inhabit some inanimate object, as a tree, spring, or stone. Many Animists gave the name of the local deity as that of the sect, such as Bābādeo (187,413), or Bārābīj (96,518).

Among Muhammadans the Sunnis (449,885) predominate considerably over the Shiahs (50,357).

In the eleventh and twelfth centuries the Jain religion was the chief form of worship of the highest classes in Central India, and the remains of temples and images belonging to this sect are met with all over the Agency. There are still old temples at Khajrāho and Sonāgir, in Bundelkhand, and several places of pilgrimage, such as Bāwangaza in Barwānī. The Digambaras (54,605) and Swetāmbaras (35,475) are the most prominent sects among them.

Of the local forms of belief, the Dhāmī, Hardol Lālā, and Bābā Kapūr sects are peculiar. The first two belong to Bundelkhand, and the last to Gwalior. The founder of the Dhāmī sect was one Prānnāth, a native of Sind, who migrated to Pannā in the eighteenth century, and, settling there, commenced to preach his doctrines, which, like those of Kabīr, sought to reconcile the Hindu and Muhammadan religions. His followers are very numerous in Pannā, but often returned themselves at the Census of 1901 as Vaishnava, and the number actually recorded (576) is thus far below the truth. Hardol was a brother of Rājā Jhujhār Singh (1626–35) of Orchhā, who suspected him, without cause, of criminal intimacy with his wife, and made him drink a cup of poison. His unhappy end roused public indignation, and he was in time deified. This form of worship is universal throughout Bundelkhand and has even spread to the Punjab. It was professed by about 11,000 persons in 1901. The followers of Bābā Kapūr (125) are confined to Gwalior district. Kapūr was a Muhammadan *fakīr* who lived at the foot of the Gwalior Fort, and acquired a wide reputation for sanctity. He died in 1571.

The Census of 1901 shows a large increase in the number of Christians, 2,000 more being recorded than in 1891, when they were 1,000 in advance of the figures for 1881. Indore and Mālwā, where the principal mission work is carried on, show the largest number of Christians. The total number of native Christians is, however, still very small, only amounting to 3,715 in 1901. Success has chiefly been met with among the aboriginal tribes and lower castes. The following missions have branches in Central India : the Canadian Presbyterian Mission; the St. John's Mission at Mhow; the Friends Mission at Sehore; the Society of Friends of Ohio at Nowgong; the Hansley Bird Mission at Nīmach; Panditā Rāma Bai's Mission at Nīmach; and Roman Catholic missions in several places. The most important of all is the Canadian Presbyterian Mission, with its head-quarters at Indore and a number of out-stations. There is no doubt that the famine greatly assisted their work, a fact recognized in the reports. A great deal of work is done by the medical officers of this mission.

Statistics of the population belonging to the chief religions in 1891 and 1901 are given below :—

	Hindus.	Musalmāns.	Jains.	Animists.	Christians.		Others.
					Total.	Native.	
1891	7,735,246	568,640	89,984	1,916,209	5,999	894	2,734
1901	6,983,348	528,833	112,998	992,458	8,114	3,715	3,030

The majority of the population of Central India is essentially agricultural, even Brāhmans, Rājputs, and Thākurs not infrequently

depending on agriculture. As a rule, however, they consider it derogatory to their caste, especially in the eastern section of the Agency, to put their own hands to the plough, employing servants to carry out this part of the work.

According to the Census of 1901, actual workers numbered 3,027,026 males and 1,637,291 females, while dependents of both sexes numbered 3,964,464. Of these, 1,514,599 males and 836,190 females supported themselves by agricultural or pastoral occupations, having 2,175,175 dependent on them. They form 52 per cent. of the total population. Of those supported by agriculture, the great majority were actual cultivators, while 925,851 were agricultural labourers, of whom 35 per cent. were regular farm servants. Personal and domestic service supported 482,273 persons, and 1,475,561 were engaged in the preparation and supply of material substances. Of these, 269,039 supplied vegetable food and 72,459 were engaged in providing drink, condiments, and stimulants, of whom 22,049 were wine and spirit-sellers. The number of persons occupied in supplying firewood and forage was 98,913, of whom 52,685 sold grass, and 40,955 sold firewood and charcoal. Of 304,299 persons engaged in occupations connected with textile fabrics and dress, 207,307 followed cotton-cleaning, pressing, ginning, weaving (hand industry), spinning, and other processes, and 78,018 persons were engaged in the preparation of dress, of whom 48,849 were tailors. Workers in metals and precious stones numbered 105,671, of whom 40,497 worked in gold and precious stones and 51,358 in iron and hardware. Workers in earthen- and stoneware numbered 81,769. The number of persons engaged in connexion with wood, cane, and leaves was 133,622, of whom 55,462 were carpenters and 29,979 dealers in timber and bamboos, and 34,218 dealers in baskets, mats, and brooms. Of the 217,189 returned as engaged in occupations connected with leather, 152,960 were shoe, boot, and sandal-makers. The population engaged in commerce was 183,625, composed chiefly of bankers (24,471), money-changers and testers (16,668), general merchants (11,022), and shopkeepers (88,702). The professional classes numbered 121,846, including 37,148 priests and ministers, 14,611 temple and other servants, 2,059 native medical practitioners, and 1,896 midwives. The professions of music and dancing were followed by 18,847, who included 11,383 actors, singers, and dancers, the majority being in Bundelkhand and the Bhīl tracts. Manual labour supported 1,109,608, while 268,860 lived by mendicancy. The majority of the last two classes were returned in urban areas.

Meals are generally taken twice a day, at noon and in the evening. Well-to-do men often take some light refreshment in the early morning and again in the afternoon. The ordinary food of the rich and middle classes consists of *chapātis* (thin cakes) of wheat flour, pulse, rice, *ghī*,

sugar, milk, vegetables, and sweets. No local Brāhmans or Baniās eat flesh. Among the poorer classes, those living in the western section generally eat bread (not thin cakes) made of wheat and *jowār* ground together, or of *jowār* and other millets, with pulses, vegetables, onions or garlic. Those inhabiting the eastern section of the Agency make bread of barley and gram ground together, or of *kodon*, *sāmān*, *jowār* or *kutkī*, which is eaten with pulses and vegetables, or with curds and buttermilk. The flowers of the *mahuā* (*Bassia latifolia*) are eaten as a luxury in Bundelkhand, the fresh flowers in the hot season, and the dried flowers at other times. The latter are parched and ground, and then made into a form of bread. The Bhīls live on maize, *jowār*, and a large number of jungle roots and plants. The *mahuā* flower is looked on by them as a great delicacy.

In rural areas, and among the poorer classes in towns, the males wear the loin-cloth known as a *dhotī*. It is about 10 feet long and 4 broad, and is worn from the waist downward. A jacket, called *mirzal* in the east of the Agency and *bandī* in the west, made of coarse white country cloth, covers the upper part of the body. The head-dress is called *sāfa* (a piece of cloth wound round the head) in the east, and *pagrī* (or a made-up head-dress) in the west. Both sections use country shoes, those of Bundelkhand being peculiar for high flaps in front and behind. The well-to-do classes also wear the *dhotī*, but of superior cloth, or else trousers, coats of various styles, a *sāfa* or coloured *pagrī*, and English shoes. Elderly persons usually carry a sheet hanging over their shoulders. The younger generation, however, now prefer to wear caps instead of the *sāfa* or *pagrī*, while the use of English shirts, coats, waistcoats, trousers, socks, and boots is becoming very common in towns. The hair is also dressed as a rule in the English fashion.

In Mālwā the women wear a coloured *lehnga* (petticoat), and a *cholī* (bodice) on the upper part of the body, a piece of cloth called the *orni* being used to cover the head and shoulders. In the east of the Agency, however, they wear a *sārī*, a single piece of cloth so folded as to act as a *dhotī*, and also as a covering for the body and head.

The huts of the agricultural classes in the western section are small mud dwellings with bamboo doors, the roof being sometimes tiled, but far more often thatched with grass or covered with mud. In the eastern section the huts are similar, but tiles are generally used for the roof. Adjoining the house there is usually a courtyard for the cattle. In places where sandstone is plentiful, houses are mainly constructed of this material, as at Gwalior and Bhopāl, and in all villages along the sandstone outcrops. In towns, houses of several storeys are common. In Mālwā these are often ornamented with picturesque carved wooden balconies and projecting windows. The influence of European example is noticeable in towns, especially in Bhopāl.

The dead bodies of Hindus are burnt, except those of Sanyāsīs and infants, which are buried. Cremation takes place by the side of a stream, the ashes being, if possible, conveyed to a sacred river; otherwise they are committed to some local stream. The people of Mālwā usually throw the ashes after cremation into the nearest stream. Muhammadans bury their dead in regular cemeteries.

Children's games consist of *gili danda* (tip-cat), kite-flying, *ankhmichī* (blind-man's-buff), and the like. In towns where there are Europeans, cricket, hockey, and football have become regular institutions. Indoor games include chess, cards, and *chaupar*. Polo is a favourite game with native chiefs and their Sardārs, who are also fond of all forms of sport, including pigsticking and big game shooting. Partridge and cock-fighting, the latter especially in Gwalior, are popular forms of amusement. Theatrical performances are common in large towns, several amateur companies even existing. Recitations by Bhāts of family exploits and tales from the Rāmāyana are eagerly listened to.

The great yearly festivals are the only holidays enjoyed by the population. The most important are the Dasahra at the close of the rains, which is specially observed by Marāthās as having in former days marked the recommencement of their forays; the Dewālī, the great feast of the trading classes, when the new financial year opens; the Holī, the festival of spring; the Ganesh Chaturthī, a special festival among the people of Mālwā; the Gangor, also a Mālwā festival; and the Raksha Bandhan.

Among Muhammadans the Muharram is the only important feast; and, although the population is mainly Sunni, *tāzias* are always borne in procession, being sent by all important personages, Hindu as well as Muhammadan, including the chief of the State.

Surnames are unknown, except among the Marāthās. Hindus are called after gods or famous personages of the Mahābhārata and Rāmā yana, and also receive fancy names, such as Pyāre Lāl. Muhammadans name their children after saints and persons of note. Low-caste Hindus often name their children after days of the week, such as Manglia. The jungle tribes now use names similar to those of low-class Hindus.

Agriculture.

Central India possesses soils of every class, from the rich black cotton soil which covers the greater part of Mālwā to the dry stony red earth met with in the gneissic area of Bundelkhand. Generally speaking, the soil of the Agency falls into three main groups, corresponding with the three natural divisions: the Mālwā plateau; the low-lying land of northern Gwalior, Bundelkhand, and Baghelkhand; and the hilly tracts. The most favourable conditions exist in Mālwā, where the prevalence of black cotton soil makes cultivation possible even with a light rainfall. In northern Gwalior, Bundelkhand, and Baghelkhand poorer soils predominate, requiring a

heavier rainfall and some irrigation. In all regions, however, the crops are almost entirely dependent on the rainfall, there being no general or extensive system of artificial irrigation.

The soil is classed by the cultivator in three ways: by composition, position (i.e. whether near or remote from villages, which affects facility for manuring and irrigation), and by capability for bearing certain crops. In Mālwā the chief classes are *kāli matti*, the 'black cotton soil' of Europeans, *bhūri* or *bhūmar*, *dhāmī*, and *bhatorī* (stony). The black soil is formed by the disintegration of the Deccan trap, which prevails over the greater part of this region, *bhūri* and *dhāmī* being lighter soils with a greater proportion of sand. All three, however, are sufficiently retentive of moisture to bear all the ordinary crops, excepting poppy and sugar-cane, both in the autumn (*kharīf*) and spring (*rabi*) season, without irrigation. The other soils are suitable only for the autumn crops, unless irrigated. In the Nimār tract, which lies south of Mālwā proper below the Vindhyan range, there is, except actually in the river bed, a preponderance of the lighter soils, as compared with Mālwā, which makes irrigation necessary, while the stiffer nature of the soil necessitates the use of heavier implements.

In Bundelkhand and Baghelkhand the soils include *mota*, a variety of black soil of inferior quality to that of Mālwā and less general in distribution, being met with only in intrusive dikes of trap rock; and other lighter soils known as *kābar parua*, *pathron*, and *rākar*, the last being the stony soil so common in the gneissic area and in the hills. Generally speaking the soil is less fertile, and bears but little poppy, a plant requiring a rich soil.

Agricultural operations are invariably carried out with regard to rainfall and the ascendancy of special *nakshatras* (solar asterisms). Of these asterisms ten fall in the agricultural season, and numerous sayings are current relating to the efficacy or otherwise of rain falling under their influence. Ploughing in Central India is begun for the autumn crops (*kharīf*) on Akhātīj, the third (*tīj*) of the bright half of the Hindu month of Vaishākh (April–May), when the plough is worshipped and other ceremonies are performed. First the *bakhar* or harrow is passed over the ground, which is then ploughed and sown. The fourth process is weeding, the fifth thinning out, and the sixth reaping. Ploughing penetrates to a depth of only six inches, as the nutritive principle is not supposed to reside at a greater depth. In Nimār, ploughing for the next autumn is carried out immediately after the reaping of the last season's crops, and is continued at intervals until the next sowing. This system, which is not followed in Mālwā, is necessitated by the poorer nature of the soil. In the hilly tracts no operations are commenced till after the first rain has fallen, as the stony soil is incapable of bearing till well moistened. In a few places

the destructive form of cultivation known as *dahiya* is carried on, trees being cut down and burnt, and the crop grown in the ashes. This process is, however, now discouraged, and is gradually dying out.

Except in the hilly tracts, there are two field seasons in Central India: the *kharīf* or *shiālu*, when the autumn crops are grown during the rains, and the *rabi* or *unhālu*, when the spring crops are cultivated. The less expensive millets, cotton, and *til* form the chief products of the autumn sowing; wheat, gram, linseed, and poppy of the spring.

The *kharīf* crops are sown in June, during the ascendancy of the *mrig nakshatra*, after the moist breeze known in Mālwā as *kulāwan* has set in, with rain. In Bundelkhand the sowing takes place in Asārh, about a month later. The seed is usually sown through a drill. The process in the case of the *rabi* crops is similar, ploughing commencing in Sāwan (August) and sowing in Kārtik (October–November). The seed is sown broadcast or with a drill. The autumn crops, when once well started, require but little care, whereas the spring crops depend on a sufficiency of rain to moisten the soil thoroughly, and to supply water for irrigation.

Methods of reaping vary. Only the heads or pods of *jowār* and *tūar* are cut, while other crops are reaped close to the ground, except gram, which is pulled up by the roots. The crops when gathered are taken to the threshing-floor, where the grain is trodden out by bullocks, except in the case of *kodon*, *rameli*, and *tūar*, which are threshed with a flail. The crops are never winnowed in an east wind, which is supposed to bring blight with it.

In 1901, 4,525,764 persons, or 52 per cent. of the population, were recorded as supported by agricultural and pastoral occupations. The actual workers falling in these groups were 34 per cent. of males and 19 per cent. of females.

The principal crops in Central India are—food-grains: *jowār* or *iundī* (*Sorghum vulgare*), maize (*Zea Mays*), *bājra* (*Pennisetum typhoideum*), *tūar* or *arhar* (*Cajanus indicus*), *sāmān* (*Panicum frumentaceum*), *kodon* (*Paspalum scrobiculatum*), *kākun* (*Setaria italica*), *kutkī* (*Panicum miliare*), *urad* (*Phaseolus radiatus*), wheat (*Triticum sativum*), gram (*Cicer arietinum*), *batla* (*Pisum sativum*), *masūr* (*Ervum Lens*), and barley (*Hordeum vulgare*); oilseeds: *til* (*Sesamum indicum*), *rameli* (*Guizotia abyssinica*), *alsi* (*Linum usitatissimum*), and *rai* (*Sinapis racemosa*); fibres: hemp, both *san* (*Crotolaria juncea*) and *ambārī* or Deccan hemp (*Hibiscus cannabinus*), and cotton (*Gossypium indicum*); stimulants: *pān* (*Piper Betle*), *gānja* (*Cannabis sativa*), tobacco (*Nicotiana Tabacum*), and poppy (*Papaver somniferum*). All the usual spices and vegetables met with in Northern India are also grown.

Though accurate statistics are not available, the total cultivated area in 1902–3 was approximately 19,400 square miles, or 25 per cent. of

the total area of the Agency (*see* table on p. 390). The staple food-grains are: *jowār*, occupying 3,500 square miles, or 17 per cent. of the cropped area; gram (2,300) and wheat (2,270), each 11 per cent.; rice (950), 5 per cent.; maize (680), 3 per cent.; and in the eastern section of the Agency, *kodon* (200), 1 per cent.

Jowār, the principal food-crop of the western section, is sown during the rains, carefully weeded, and reaped in November and December. It is grown as a food-crop, and is almost invariably sown together with *tūar* or *arhar*, *urad* or *mūng* (*Phaseolus Mungo*), and sometimes cotton. When grown for fodder, however, it is sown alone, is not weeded, and is cut as soon as it commences flowering. The grain is eaten in the winter, either parched or green, the latter form being considered a great relish. It serves as food to the cultivator for a couple of months. One acre requires about 4 seers of seed and yields 4¼ cwt.

Gram is a spring crop, sown after the termination of the rains, and gathered in March or April. This crop has great powers of reviving exhausted soils, and is always grown for this purpose, and as a first crop on newly broken land. Like *jowār*, it is eaten parched. In the eastern section and in northern Gwalior it is mixed with barley and made into cakes. The average yield per acre is 3 cwt., from about 34 seers of seed.

Wheat, the favourite food of all but the poorest classes, is grown in winter, after the rains have ceased. It is irrigated only in the eastern section of the Agency, where, moreover, the yield is always inferior to that obtained without irrigation from the rich soils of Mālwā. It is sown at the same time as gram, and the grain is parched and eaten like *jowār*. An acre requires about 42 seers of seed, giving a yield of 4¼ cwt. of grain.

Maize, one of the earliest autumn crops, is sown as soon as the rains have set in, and reaches maturity in three months. The grain, which is eaten green, is highly prized. Like *jowār*, the crop is also grown for fodder. Maize is sometimes sown in late autumn and early spring as an irrigated crop, being often followed by poppy. An acre requires 8 seers of seed, yielding 4¼ cwt.

Kodon is the most important food-grain of the poorest classes in the east of the Agency. It is sown on inferior soils during the rains, and gathered in July or August. An acre requires 14½ seers of seed, and yields 5½ cwt. of grain.

The chief subsidiary food-crops are *tūar* or *arhar* and *mūng*, which are almost always grown mixed with *jowār*, *moth* (*Phaseolus aconitifolia*), and *matar* (*Pisum sativum*). Several species of the smaller millets are also grown in the rains, of which *sāmān* (*Panicum frumentaceum*), *kutkī* (*P. miliare*), and *kākun* form an important source of food for the poorer classes.

The most valuable oilseeds are *til*, *alsi*, and *mungphali* (*Arachis*

hypogea). The last, which is grown in Mālwā to a considerable extent, though exported in large quantities for its oil, is also used locally as food.

By far the most important source of fibre is cotton, which in 1902–3 covered 953 square miles. It is very often grown mixed with *til*. Hemp, both *san* and *ambārī*, is cultivated only to a small extent.

Complete statistics are not available to show the exact extent to which poppy is grown, but a brief account may be given of the cultivation, which is of great economic importance. The mild climate, rich soil, and facilities for irrigation in Mālwā are well suited for this crop. It is always sown in the *mār* or black soil, which is heavily manured and watered seven or nine times. It is not uncommon to sow poppy and sugar-cane in the same field, the latter crop not maturing till many months after the opium has been collected. When the poppy is about 3 inches high, the plants are thinned out and the beds are weeded. As soon as the capsules show a brown pubescence, they are carefully lanced, and the gummy juice (*chīk*) which exudes is scraped off and collected. The preparation of refined opium will be described under Arts and Manufactures. In 1894–5, before the recent series of unfavourable years, poppy covered 315 square miles and the total yield was 1,332 tons. Five years later the area was only 37 square miles and the yield 96 tons, but in 1902–3 the crop was grown on 237 square miles, producing 959 tons. The cultivation of poppy in Mālwā is mentioned by Garcia d'Orta in the sixteenth century. It was once confined to the tract between the Chambal and Siprā, but has since extended north into Rājputāna, and south wherever the soil is suitable. The flowers are of all shades from pink to dark red, in contrast to the monotonous white prevailing in the Doāb, Oudh, and Bihār. As a rule the *chīk* is delivered to the banker who has advanced money for seed, only a few well-to-do cultivators being in a position to sell their produce in the open market, where they get from Rs. 6 to Rs. 7 a seer for it.

The following fruits are generally cultivated: mango (*Mangifera indica*), *mahuā* (*Bassia latifolia*), peach (*Prunus persica*), loquat (*Eriobotrys japonica*), custard-apple (*Anona squamosa*), guava (*Psydium Guyava*), plantain (*Musa sapientum*), shaddock (*Citrus decumana*), and various kinds of fig, melon, lime, and citron. Vegetables are produced in garden lands in the vicinity of towns and villages, those mentioned below being the commonest: gourds, cucumbers, potato, *shakarkhand* (*Ipomoea Batatas*), cabbage, cauliflower, onion, carrot, yam, *kacha*, *ghuiyān* (*Colocasia antiquorum*), garlic, the egg-plant or *brinjāl* (*Solanum melongena*), *mūri* (*Foeniculum vulgare*), *methi* (*Trigonella Foenum graecum*), *pālak* (*Rhinacanthus communis*), *adrak* (*Zingiber officinale*) and red pepper.

Manure is but little used, except for special crops such as poppy and

sugar-cane or vegetables, and then only in fields close to villages. There are three sources of supply: village sweepings which have been allowed to rot in pits for twelve months, goat and sheep dung obtained by penning these animals on the land, and green manure. This last is used for poppy. *San* or *urad* is grown on the field and ploughed into the soil when in flower; the process is known as *san chur* or *urd chur*. Night-soil (*sonkhāt*) is never used, except in fields near large towns.

Rotation cannot be said to be practised with any great regularity. In Mālwā virgin soil is first sown with gram, in Bundelkhand with *til*, this being followed by wheat, *jowār*, and cotton. In Mālwā the rotation is then repeated, omitting gram. In Bundelkhand *kodon* and *kutkī* are sown, followed by *jowār*, *rāli*, and *kodon* again; after the third year the field is left fallow for three years and the process is repeated.

Mixed sowings, which take the place of rotation to some extent, are common in Mālwā, but less so in Nimār. *Jowār* and *tūar*, maize and *urad* or *ambārī*, wheat and gram or *alsī*, and poppy and sugar-cane are sown together in the same field.

A field of one acre requires in seed, for maize about 8 seers, *jowār* 4 seers, and wheat 42 seers, yielding in each case 10 maunds of grain. From 2 to 3 seers of seed are required for poppy, and the yield is 6 maunds of seed. In the case of *til*, $1\frac{1}{2}$ seers are sown and the ordinary crop is about 6 maunds.

All large States now make advances to their cultivators, while native bankers also advance their clients seed and cash. In the case of petty estates, it is often necessary to grant help from Imperial funds.

No new varieties of seed have so far been successfully introduced. Attempts have been made, but as yet have been insufficient to overcome the strong local prejudice which exists against change. Similarly, except for a few improved sugar-cane mills, little has been done to introduce new or improved implements.

The implements used are similar to those met with elsewhere in Northern India, and differ but little in construction throughout the Agency, except that in Nimār and the eastern section the ploughs are of heavier make. The *hāl* (plough), *bakhar* (harrow), *dora* (small harrow) for passing through rising crops, and *nai* (seed-drill) are the principal implements.

Deficient rainfall is always followed by an increase in field rats, which cause great damage to standing crops. Locusts occasionally appear. Scarcity of labour due to diminution in population from famine and plague has seriously affected agriculture, especially the cultivation of the spring crops, which require much attention.

There are two well-known breeds of Central India cattle, the Mālwī and the Nimārī. The Mālwī breed are medium-sized, generally of a grey, silver-grey, or white colour. They are very strong and active

for their size, having deep wide frames, flat shapely bones, and very hard feet. Their hind quarters droop slightly, while the dewlap and loose skin about the neck is well developed and the hump prominent. The muzzle, which is broad, should always be black and also the hair round the eye sockets and the eye membranes; these are the recognized marks of the breed. The head should be short, the horns springing forward and up with a graceful outward curve. The Umatwārī species of this breed is a heavier, less active type than the true Mālwī.

The Nimārī breed is much larger than the Mālwī, and well adapted to heavy work. These cattle are usually of a broken red and white colour, more rarely all red with white spots. They have large horns, very thick at the base, and usually curled over the head. The eye membrane and nose are commonly flesh-coloured. The head is coarse and large, and the ears are pendulous, while the loose skin on sheath and navel is very noticeable. Their frames are large and square, the legbones round, and the feet coarse, unshapely, and soft. They are sluggish by nature, but very strong. These cattle are bought by Government for military purposes.

Buffaloes, horses, sheep, and goats are reared in most villages, but there are no breeds of any special importance, though the goats from the Bhind and Tonwarghār districts of Gwalior have a local reputation. An unsuccessful attempt was at one time made by the British Government to encourage horse and mule breeding by maintaining stallions at Agar and Guna, under the officer commanding the Central India Horse.

No difficulties are experienced in ordinary years in feeding cattle, as Central India abounds in pasture lands and jungles affording grazing more than sufficient for local needs.

There are very few important cattle fairs in the Agency, though most places of any size have weekly markets, where the sale of cattle takes place. A large cattle and horse fair has lately been started at Gwalior.

Irrigation is not carried on in the Agency as systematically as it might be. The attention of all States has now, however, been directed to the question. In Mālwā irrigation is practically confined to poppy, sugar-cane, and vegetables, being effected from wells, almost entirely by means of the *charas* (leathern bucket) lift. In Bundelkhand and northern Gwalior water is supplied to sugar-cane, betel-vine, wheat, and barley from wells by means of the Persian wheel (*rahat*) and the *charas*. In Baghelkhand temporary dams for the retention of rainwater in suitable places are the chief means of irrigation. The cost of a masonry well averages Rs. 500, and of an unbricked well Rs. 50 to Rs. 200. The total area under irrigation in Central India in 1902–3 was estimated at about 1,140 square miles, or 6 per cent. of the cultivated area.

Rents, wages, and prices.

According to the usual official phraseology, the payments made by the actual cultivators in Central India are revenue and not rent. The States are everywhere regarded as sole proprietors of the soil, and their relations with the cultivators will be described below, under Land Revenue.

The prices of staple food-grains have undoubtedly risen, though in the absence of regular statistics it is impossible to give any reliable figures. The variations are considerably affected by local conditions, especially the want of good roads, which cause large accumulations of grain at certain centres. So far as can be ascertained, an average rise of 40 to 50 per cent. has taken place in the last thirty years, the change being most marked in the western section of the Agency. In the country round Gwalior *jowār* and barley sold in 1874 at 60 seers to the rupee, while now the rate is only 30 seers; in Rewah the same grains sold in 1880 at 47 and 40 seers to the rupee, but now sell at only 30, while in the famine year of 1900 the rates fell to 19 and 16 seers per rupee.

Wages have similarly risen, especially in certain rural districts where the population has been so seriously diminished by famine and plague that it is difficult to procure labour when wanted. In the western section carpenters and blacksmiths now receive 12 annas a day instead of 8 annas, and labourers 5 annas instead of 2 and 3 annas. In large towns the rates are often higher even than these, but they vary considerably in each case, the rates in Indore city being 30 per cent. higher than in Bhopāl city.

For ordinary labour cash wages are now becoming general; but wages in kind are still the rule for agricultural operations, such as reaping and weeding, while the village servants—*pātel*, priest, artisan, watchman, and *balai*—still receive doles of grain in return for their services. Thus, agricultural labourers commonly receive one *paseri* ($2\frac{1}{2}$ seers) of *jowār* or maize a day. During the harvest season they obtain 24 seers per *bīgha*, or about 5 seers a day in the eastern and a little less in the western section, for cutting maize, *jowār*, *kodon*, or *sāmān*; and 15 seers per *bīgha* in the eastern section, and about $7\frac{1}{2}$ seers a day in the western section, for gathering wheat or gram. A village artisan receives about 30 seers of each kind of grain yearly from every cultivator.

The table on the next page gives the rates of wages during the thirty years ending 1904.

The material condition of the people in urban areas has undoubtedly improved considerably. The middle-class clerk, however, is not as a rule well off, as he is obliged to keep up a respectable appearance generally beyond his means. Pensionable appointments are comparatively rare in the States, and promotion has little connexion with length

of service or merit, while the scale of pay is small. The cultivator's position is not very satisfactory, though in spite of bad seasons there is no doubt that he now dresses better than he used to do thirty years ago, and in places on high roads or near towns or railways he has learned to desire a higher standard of comfort and more show. A great source of impoverishment is the lavish expenditure incurred at marriages, which often cripples a man for years, perhaps for the rest of his life.

	Rate of wages per month in							
	Western Section.				Eastern Section.			
	1874.	1884.	1894.	1904.	1874.	1884.	1894.	1904.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Carpenter .	10 to 12	12 to 15	15 to 16	14 to 23	7 to 15	7½ to 15	7½ to 15	12 to 24
Blacksmith.	7 to 10	12 to 15	12 to 15	12 to 15	4 to 6	4 to 6	5 to 7	5 to 7
Mason .	8 to 10	12 to 15	12 to 15	12 to 22	7½ to 15	7½ to 15	6 to 16	7½ to 20
Ordinary labourer .	3 to 5	4 to 6	6 to 7	6 to 10	3 to 5	2 to 5	4 to 5	4 to 5
Agricultural labourer .	2 to 4	3 to 5	3 to 5	4 to 6	2 to 3	2 to 4	3 to 4	3 to 4

The condition of the landless labourer is not enviable. He lives from hand to mouth, his wages being, as a rule, only just sufficient to keep body and soul together. To be in debt is undoubtedly the normal condition of all but the trading classes. These have profited enormously by the improvements effected in the administration of the States, and in all places of any size the traders are noted for their increasing opulence.

Forests.

The forests of Central India, which cover a considerable area, belong to the deciduous and dry classes, and are situated mainly along the line of the Vindhya range and its various branches, and in the Sātpurā, Kaimur, and Pannā systems. It is not possible to give accurate figures as to the area covered by forests, but roughly 13,000 square miles or 17 per cent. of the total are so occupied. The States having the largest forest area are: Rewah, with 4,632 square miles, of which 642 square miles are 'reserved,' bringing in an income of 4·1 lakhs; Indore, with 3,000 square miles, giving an income of 1·8 lakhs; Bhopāl, with 1,713 square miles, giving an income of Rs. 7,800; Gwalior, with 1,715 square miles, giving an income of Rs. 72,000; Barwānī, with 566 square miles, giving an income of Rs. 28,000; Dhār, with 381 square miles, giving an income of Rs. 26,000; and Pannā, with 1,728 square miles, giving an income of Rs. 22,000. The chief sources of income are the flowers and fruit of the *mahuā*, lac, *rāl* (extracted from the *sāl*), *chironjī*, and, especially in the eastern section of the Agency, timber, besides minor products.

The deciduous forests contain a large number of trees producing timber, fruit, or sap of commercial value; the *sāl* (*Shorea robusta*),

sandal-wood (*Santalum album*), *tendū* (*Diospyros tomentosa*), *mahuā* (*Bassia latifolia*), *khair* (*Acacia Catechu*), *āl* (*Morinda tinctoria*), and those of other genera such as *Terminalia*, *Anogeissus*, *Sterculia*, *Eugenia*, and *Hardwickia*. On the Mālwā plateau there is little or no forest, the prevailing trees being the *dhāk* (*Butea frondosa*), and various species of *Mimosa*, *Albizzia*, *Melia*, and *Dalbergia*.

Distinct changes are noticeable in passing from the trap to the Vindhyan sandstone formation, the latter favouring the growth of large trees. The forest area of Central India has decreased considerably since the period of Mughal rule, both in the extent covered and in the quality of the forest. The plains of Mālwā were in those days covered with a thick jungle of *dhāk*, while the region between Gwalior and Bhīlsa was sufficiently wooded to afford shelter to large herds of elephants, which the emperors used to hunt in their journeys from the Deccan to Delhi. The south of Indore State round Satwās and Bijāgarh, and the Bhat-Ghora district which lay partly in Pannā and partly in Rewah, were frequented by large herds of these animals, those from Pannā being esteemed the best. The jungle round the town of Orchhā was thick enough to occupy the Mughal army several days in cutting a way through it.

Till within the last few years systematic forestry was never practised, and there are still large areas which require proper management. Save the protection given to a few selected trees, such as the *mahuā* (*Bassia latifolia*), *khair* (*Acacia Catechu*), *shīsham* (*Dalbergia Sissoo*), teak, *biya* (*Pterocarpus Marsupium*), *anjan* (*Hardwickia binata*), *seja* (*Lagerstroemia parviflora*), *achār* (*Buchanania latifolia*), *tendū* (*Diospyros tomentosa*), and a few others, the forests have been left to the mercy of the jungle tribes, who yearly destroyed considerable tracts by their *dahiya* cultivation, while the villager cut down ruthlessly for firewood and building purposes, no attempt at afforestation being ever made. Many useful grasses are gathered, such as *rūsa* (*Andropogon sp.*), from which a fragrant oil is extracted, and *punia* and *dūb* (*Cynodon dactylon*), used for fodder.

Most of the forest work is carried on by the jungle tribes, including the Gonds, Korkūs, and Kols, who live chiefly along the line of the Vindhyas south of the Bhopāl and Rewah States; the Sahariās, who live in the central hilly tracts of Bundelkhand, and in the region round Narwar, Guna, and Gwalior; and the Bhīls, who inhabit the Vindhyan and Sātpurā ranges on either side of the Narbadā and various parts of Mālwā.

Mines and minerals.

The known mineral wealth of the Agency is considerable, and there is every likelihood that further examination will reveal fresh deposits of value.

Of the carbon compounds, other than diamond, coal is the only valuable deposit. This is found in the Gondwāna rocks

in the south of the Rewah State. The mines are situated at UMARIĀ, and are worked by shafts, the workers including a large proportion of the jungle tribes.

Copper has been found at Bardī (24° 32′ N., 82° 25′ E.) and at Tagwa village (24° 16′ N., 82° 0′ E.) in the Rewah State, while it was at one time extensively worked in the Shāhnagar *pargana* of the Pannā State. Lead in the form of galena has been found at Bargoa village near Bardī, and exists in rich veins in the hills near Seondha in Datiā, in the Pār sandstones, and in the quartzites of the Bijāwars. Iron is met with throughout the Vindhyan rocks, to which it gives its characteristic red and brown colours. The richest and most easily worked ores occur at Hirāpur village (24° 42′ N., 79° 39′ E.) in the Bijāwar State, once a famous centre of the iron-smelting industry. Other rich deposits occur near Barwāhā in Indore, where an attempt to revive the industry was made in 1860 by Colonel Keatinge; and in Gwalior, where there are the remains of many old workings, especially at the Pār hill (26° 2′ N., 78° 5′ E.). This industry has now almost entirely vanished, owing to competition with European iron.

Manganese has been found in the Gwalior State and in Jhābua. In the latter place it is worked, 6,800 tons having been extracted in 1903-4.

In materials for construction Central India is unusually rich, much of the local building stone being unrivalled in beauty of colour, ease of working, and resistance to the elements. The sandstones of the Vindhyan series stand first, and, besides having supplied material for the ancient buildings at many places, are still largely used for local purposes, and are to a certain extent exported. The Nīmach and Satnā limestones are exported in considerable quantities. Among the Vindhyan sandstones the Kaimur sandstone of Bhopāl, of a fine deep purplish red colour, has been used in many recent buildings, and in the old temple at NEMĀWAR. It is fully equal to the similar stone met with in Mirzāpur and Chunār. The lower Bandairs have been used in the Tāj-ul-Masājid at Bhopāl and in the Sānchī *stūpa*, while stone of the upper Bandair, besides being used in many modern edifices, was employed in the old temple at BHOJPUR. In Gwalior, Bhopāl, and parts of Baghelkhand these sandstones occur in large deposits well suited for building purposes.

Corundum is still profitably extracted in Rewah; 600 maunds were obtained in 1902. Asbestos is found in parts of the Bhopāwar Political Charge, but attempts to work it have hitherto proved a failure. The only valuable gems met with are diamonds, which are found chiefly in the neighbourhood of Pannā. Agates and jasper are found in several localities.

Central India was once famous for the fine cloths and muslins made

at several places in Mālwā. This industry is still carried on at Chanderī, where delicate muslins, often shot with gold and silver thread, are made and exported all over India. The demand for such cloth has, however, diminished with the disappearance of many native courts. At Sārangpur and Sehore town the industry still lingers, but is dying out, while at Sironj, once a famous centre of this manufacture, all recollection even of its former existence has vanished. The *sārīs* and *dhotījodās* of Maheshwar have a considerable sale. The usual coarse country cloths are produced in most places. There is a weaving mill at Indore city which turns out cloth of moderate fineness. Cloth is dyed and printed in many places, the *āl* (*Morinda tinctoria*) dye of Mandasor and Gautampurā being famous.

Arts and manufactures.

A considerable industry formerly existed in the working of local iron obtained from the rich hematites found at Bijāwar, Barwāhā, and other places, but it is now carried on only here and there to a very small extent. Inlaid metal-work is manufactured at Rāmpura in the Indore State.

There is still a considerable stone-cutting industry, especially in the country round Gwalior, where the fine local sandstones are carved with great skill, the lattice-work in particular being often exceedingly beautiful. The industry is one of long standing in Central India, as the buildings at Sānchī, Khajrāho, Gwalior, Chanderī, and other places show.

One of the principal and certainly the most lucrative of the industries of Central India is the manufacture of Mālwā opium, chiefly for the China market. The *chīk* or crude opium, collected from the poppy plants, is soaked by the cultivator in linseed-oil to prevent its drying. This composition is kept for about six weeks in bags of double sheeting in a dark room, until the oil drains off. In the beginning of the rains the bags are emptied into large copper vessels in which the *chīk* is pressed and kneaded, after which it is again kneaded in a succession of flat copper pans, called *parāt*, till of sufficient consistency to be made into balls. Each ball weighs about 40 tolas (16 oz.). The ball is next dipped into some waste opium liquor called *rabba* or *jethāpānī*, and covered with pieces of dried, broken poppy leaf. It is then placed on a shelf, or rack, also covered with poppy leaf, to dry, and lose all superfluous oil. After about a month the cakes are cut open and remade, so as to allow the interior portions to dry and the whole to become of uniform consistency. An inferior opium called *rabba* is extracted from the old bags by boiling them, and is disposed of chiefly in the Punjab.

In the *Periplus*, Ozene (Ujjain) is referred to as a centre from which commodities were exported through the port of Barygaza (Broach), special mention being made of onyx, porcelain, fine muslins, mallow-tinted cottons—possibly coloured with the dye of the *āl* tree—and ordinary cottons. At Mandasor there is a record of the fifth century erected by the guild

Commerce and trade.

of silk-weavers, showing that this industry must once have flourished there. In the records on the Sānchī *stūpa* mention is made of various trade-guilds, including that of workers in ivory. In the time of Akbar, the fine cloths, grain, fruit (especially grapes), mangoes, betel-leaves, and opium of Central India were famous.

No statistics are available to show the total trade of Central India. The chief imports are salt, sugar, *ghī*, kerosene oil, hardware, machinery, European piece-goods, arms, oilman's stores, and wines. The exports consist of grain, cotton, oil-seeds, opium, poppy-seed, and hides, with a certain amount of timber from States in the eastern part of the Agency, and building stone, especially the Nīmach limestone.

The chief centres of trade are Lashkar, the capital of Gwalior State, Indore, Mandasor, Ujjain, Ratlām, Mhow, Satnā, Nīmach, Bhopāl, Sehore, Morena in Gwalior, and Barwāha. These main centres are fed from district marts which are in their turn supplied from the weekly fairs. Railways and roads have effected a noticeable change during the last forty years. The large stores of surplus grain which often existed within a hundred miles of a great town, but which on account of defective communication could not be transported thence for sale, have ceased to exist. Prices have risen but are much steadier, while a supply of grain can easily be poured into any place requiring it. Commerce is carried chiefly by the railways, and by carts and pack-bullocks along the great high roads.

The traders in grain and cloth are mainly Mārwārī Baniās, in hardware and iron goods Muhammadan Bohrās, and in European oilman's stores Pārsīs. A European firm has agencies at Indore and several other places. Speculation on the rise and fall of prices of grain and opium is very common in Indore and Ratlām, though it has been prohibited in many States. The registration of such transactions, where allowed, is compulsory, and the fees bring in a considerable income.

Communications.

Central India is crossed by three of the main routes from Northern India to Bombay, all of which ultimately join the north-east main line of the Great Indian Peninsula Railway.

On the east the Allahābād-Jubbulpore branch of the East Indian State Railway runs for 89 miles through Rewah, Maihar, Pannā, and several other small States in the eastern section of the Agency, serving Satnā, the head-quarters of the Political Agent in Baghelkhand, and carrying off a considerable traffic in lime from the quarries in the Nāgod State.

Through the centre of the Agency passes the Midland section of the Great Indian Peninsula Railway, from Agra to Itārsi, traversing Gwalior and Bhopāl, and having a number of branches. For a distance of 57 miles north of Itārsi, of which 13 miles lie in British territory, the

line was constructed in 1885 by the Bhopāl State and the Government of India jointly, the State making a contribution of 50 lakhs. The net earnings are divided between the Darbār and the Government of India in proportion to the capital expenditure. Another section from Bhopāl to Ujjain was constructed jointly by the Bhopāl and Gwalior Darbārs. The line is 114 miles in length, net earnings going to the Darbārs concerned. The Bīna-Guna-Bāran branch strikes off from the Bīna station of the main line. The funds for the portion between Bīna and Guna were provided by the Gwalior Darbār, engineers being lent by the Government of India for its construction. The line was subsequently extended to Bāran, the Darbārs of Tonk and Kotah in Rājputāna also contributing to this section. The total length is 146 miles, and the net earnings are divided proportionately among the Darbārs concerned. (The Tonk portion has recently been sold to Gwalior.) A branch from Jhānsi passes eastward for 73 miles through several of the States of Bundelkhand, meeting the East Indian Railway at Mānikpur.

The lines already described are all on the broad gauge. Light railways on the 2-feet gauge run from Gwalior station south-west to Sīprī (74 miles), north-east to Bhind (53 miles), and west to Sabalgarh (58 miles). These belong to the Darbār, and lie wholly within the territory of Gwalior State, but are worked by the Great Indian Peninsula Railway.

West of these systems lies the Ajmer-Khandwā (metre gauge) section of the Rājputāna-Mālwā State Railway, 393 miles in length, of which 241 miles pass through the Agency. The construction of this line was much facilitated by loans of a crore and 75 lakhs from the Indore and Gwalior Darbārs respectively. Starting from Ajmer, the railway serves Nīmach cantonment, Sailāna by Nāmlī station, Sītāmau by Mandasor station, Jaorā, Ratlām, where it connects with the Ratlām-Godhra line, Fatehābād, where a branch strikes off to Ujjain (14 miles), Indore, and Mhow.

The Godhra-Ratlām-Nāgda (broad gauge) section of the Bombay, Baroda, and Central India Railway, with a branch to Ujjain, runs for 175 miles through Central India. The portion from Nāgda to Ratlām and Godhra was built by Government, while that from Nāgda to Ujjain belongs to the Gwalior Darbār, and lies wholly within that State. At Ujjain this line meets the Rājputāna-Mālwā Railway and the Ujjain-Bhopāl lines, and at Ratlām the Rājputāna-Mālwā Railway. It thus connects Central India with Bombay down the west coast through Gujarāt, and with Kāthiāwār. An important extension from Nāgda to Muttra via Mehidpur and Jhālrapātan (Rājputāna) is under construction. A line from Barwāha through the Narbadā valley is being surveyed.

The Katnī-Bilāspur branch of the Bengal-Nāgpur Railway, on the broad gauge, runs for 101 miles through Rewah, serving the coal-mines at Umariā, and giving through communication with Calcutta.

Central India is thus provided with a total of 1,080 miles of railway, or one mile for every 73 square miles of country. Land for the railways in Native States was given free by the Darbārs, while the abolition of transit dues has fostered trade. The most remunerative line constructed at the cost of the Darbārs is the Bhopāl-Itārsi branch, which yielded a profit of 6½ per cent. in 1904. The Nāgda-Ujjain and Bhopāl-Ujjain lines earned 3 per cent. in the same year, and the Bīna-Bāran and the Gwalior light railways between 1 and 2 per cent.

The influence of railways is very marked, especially in Mālwā, where there are more lines than in the east of the Agency. Grain can now be carried from one part to another freely, which has largely tended to equalize prices. Railways have also necessitated a relaxation of caste observances while travelling, but on the other hand they have certainly tended to bring members of the same caste living at a distance into closer communion.

According to the early Buddhist books, three great main routes passed through Central India. The most important was the road from Paithana (modern Paithan) in the Deccan to Srāvasti, stages on which were Mahissatī (Maheshwar), Ujenī (Ujjain), and Vidisha (Bhīlsa) in Mālwā. The road then turned eastwards and entered the present Bundelkhand and Baghelkhand Agencies. Merchants and travellers passed from Pātaliputra (Patna) to Sovīra on the west coast; while in the well-known story of king Pradyota of Ujjain and Jīvaka the physician of Rājagriha, a route lying through Ashta, Sehore, Bhīlsa, and Bhārhut is indicated. The principal routes became more defined in Mughal days, and are still distinguishable in the names of numerous villages with the suffix *sarai*. The road from Bijāpur to Ujjain crossed into Central India at Bhīkangaon, and passed through Gogaon to the historical ford of Akbarpur (now Khalghāt) over the Narbadā, and so via Depālpur and Fatehābād to Ujjain. Another great route led to Agra, passing in Central India through Ichhāwar, Sehore, Sironj, Mughal Sarai, Shāhdara, Sīprī, Narwar, and Gwalior. In the east travelling was attended with great hardships, and Muhammadan armies did not often venture much south of Kālinjar. The old pilgrim routes seem to have fallen into disuse to a great extent, while the rugged nature of the country was rendered more difficult of passage by the Gonds and other savage tribes who inhabited it.

There were few metalled roads in the Agency till after the Mutiny, when the first impetus was given to their construction by the desire to improve the connexion between different points of military importance. By degrees the extension of railways and improved administration have

induced the States to co-operate in extending such communications, but much still remains to be done in improving the internal connexions. The introduction of motor cars, which many chiefs are adopting, may possibly assist in this result.

The most important through line is at present the Agra-Bombay road, originally commenced by the Bombay Government about 1834. In Central India it follows a more westerly path than the old Mughal route, though it crosses the Narbadā by the same ford, now known as Khalghāt. Before the advent of the railway this was the only important trade route in Mālwā. Though its importance has diminished, and will decrease still further on the completion of the Nāgda-Muttra Railway, it still carries a considerable traffic from the Narbadā valley districts to the railway line at Mhow, and southward into Khandesh. The portions in Gwalior State are kept up by the Darbār.

Other roads, such as those from Mhow to Nīmach, Mhow to Kherighāt, Dhār to Sardārpur, and Ujjain to Agar, were made originally for military purposes, but have now become of more importance as feeders to the railways. Among the roads which still carry a considerable amount of traffic may be mentioned those from Dewās to Bhopāl through Ashta, from Biaora to Sehore and Rājgarh, and from Indore to Simrol. Altogether, Central India contains about 1,562 miles of metalled roads, of which 921 are kept up by Government and 641 by the States. No statistics are available to show the mileage of unmetalled roads.

The carts in common use are of two types—one having solid and the other spoked wheels—the frame consisting in each case of wood and bamboo. In towns, bullock carts and horse and pony carriages with springs have become common. In Gwalior town *ekkas* replace the tongas and *shigrams* met with in Indore, Mhow, and Nīmach. Motor cars are becoming common, being used by most chiefs and by district officers in the Gwalior and Indore States.

The opening of the railways has killed the traffic on rivers. There is, however, still some traffic on the Narbadā ferries at Khalghāt, Mandleshwar, and Maheshwar, and on the Chambal at Rājghāt and Dholpur.

There are now 198 British post offices in Central India. In the case of Gwalior the local system is worked in connexion with the British system under a special postal convention; a return for this State is given separately, as no distinction is made between the letters carried by the British and State systems. Besides this State, Indore, Bhopāl, Charkhārī, Chhatarpur, Datiā, and Orchhā have their own postal arrangements, controlled by the Darbārs. The States of Central India, excluding Gwalior, are distributed for postal purposes between the three circles of the United Provinces, the Central Provinces, and Rājputāna.

The following tables show the progress in British postal business:—

POSTAL STATISTICS FOR ALL STATES EXCEPT GWALIOR

	1880-1.	1890-1.	1900-1.	1903-4.
Number of post offices	61	142	144	198
Number of letter boxes	48	61	146	209
Number of miles of postal communications	1,499	2,244	2,224	2,709
Total number of postal articles delivered:—				
Letters	2,312,797	2,288,107	2,470,806	3,034,839
Postcards	132,312	879,989	2,152,501	3,082,952
Packets	22,995	68,776	273,098*	263,573*
Newspapers	234,226	332,411	546,880†	399,780†
Parcels	23,959	26,724	35,445	64,173
Value of stamps sold to the public . Rs.	73,073	88,357	1,60,897	1,83,270
Value of money orders issued . Rs.	14,69,480	34,85,300	53,32,767	48,62,102
Total amount of savings bank deposits . Rs.	...	7,00,807	12,61,099	18,19,762

* Including unregistered newspapers.
† Registered as newspapers in the Post Office.

POSTAL STATISTICS FOR GWALIOR STATE

	1885.	1890-1900 (average).	1901-2.	1903-4.
Letters, postcards, newspapers, and packets	Not available.	344,778	3,008,311	4,308,216
Parcels	" "	28,497	25,042	106,056
Value of money orders issued . Rs.	6,95,567	16,46,669	24,55,181	13,92,962

There are thirty-eight telegraph offices (departmental and combined) in Central India, irrespective of those at railway stations. New lines are being rapidly extended throughout the Agency.

The States of Gwalior, Indore, and Bhopāl have established telephonic systems at their capital towns.

Famine.

As regards frequency of famines, Central India falls into two sections. Famines have rarely occurred in Mālwā, which is noted for the extraordinary power of retaining moisture possessed by its soil. In the eastern Agencies of Bundelkhand and Baghelkhand and in the region round Gwalior, which belongs topographically to the same area, famine, or at any rate the pressure of scarcity, is more often felt.

The invariable causes of famine in Central India are a series of indifferent years, succeeded by one in which the rains fail entirely. The grain reserves, never very large nowadays, owing to better communications and increased export trade, become exhausted, and the people are unable to support themselves. In Mālwā, moreover, when the

famine of 1899–1900 fell upon it, the inhabitants were entirely unprepared for such a calamity, of which they had had no previous experience. They were unaccustomed to migrate and refused to leave their villages until it was too late, while the stream of immigrants from Rājputāna, who had hitherto always found a place of refuge in the fertile plains of Mālwā, added to the distress.

The records of famine in Central India are few, little or no notice having been taken of such visitations till comparatively recently. In 1344, in the reign of Muhammad bin Tughlak, that monarch, when travelling from Dhār to Delhi, found Mālwā plunged in famine. In 1595 and again in 1630 it also appears that there was famine in this region. Northern Gwalior was attacked by famine in 1785, and Bundelkhand in 1803–4, 1829–30, and again very severely in 1833, a year still spoken of by the people. Within more recent times two famines have attacked Central India—that of 1896–7, which affected mainly the eastern section, and that of 1899–1900, which attacked Mālwā principally.

In the famine of 1896–7 an area of 36,000 square miles was affected. For the first time regular measures were inaugurated, relief works and poorhouses being opened. The total numbers who came on relief works were 2,900,000, or a daily average of 320,000 persons, amounting to 7 per cent. of the total population, while 89,000, or 4 per cent., received gratuitous relief, the cost to the States amounting to about 86 lakhs. The mortality was severe, especially among the poorer classes.

The famine of 1899–1900 affected the western side of the Agency; and Mālwā, which had not suffered from such a visitation within the memory of man, was very badly afflicted. The area in which famine prevailed on this occasion was 47,700 square miles, or 60 per cent. of the total area of the Agency. Over about 17,275 square miles suffering was severe. Altogether, 33 million units were relieved on regular works or by charity, the cost to the States being 148 lakhs.

The results of the most recent famine are only too apparent still in Mālwā. Throughout this region in every village large numbers of ruined houses are to be seen, which are referred to as relics of *Chhapan kā sāl*, i.e. 'of the year 56,' 1956 being the corresponding Samvat year to 1899. The effects on agriculture are also marked, as the shortage of labour due to a reduced population has resulted in the abandonment of much land, especially that at a distance from villages, and in a substitution of the less delicate and cheaper *kharīf* crops for *rabi* sowings. In particular, the cultivation of poppy, which requires careful and constant attention and a large number of labourers, has diminished considerably.

During the latest period of distress prices of food-grain often rose

over 100 per cent.; thus *jowār* sold at 10 seers instead of 24 to 30 seers per rupee, wheat at 8 seers instead of 15 seers, gram at 10 seers instead of 20 seers, maize at 12 seers instead of 30 to 40 seers, and *kodon* at 12 seers instead of 30 to 40 seers. The financial position of the States was seriously affected, all but the largest having to borrow considerable sums, amounting in all to 26 lakhs. Of the mortality no reliable statistics exist; but that it was very large in both famines is undeniable, and the deaths from sickness after the actual stress of want had passed were very numerous.

The extension of railways has done much to enable food to be brought within reach of the people when famine breaks out, but in preventive measures the States are generally backward. After the famine of 1897 a survey for protective works was made in Bundelkhand, and further schemes are being prepared, while the works projected in connexion with the general irrigation survey, now in progress in the Agency, will also provide employment in future famines.

Administration.

Central India includes altogether 148 Native States and estates (as well as a large portion of the Tonk State in Rājputāna), which range in size from Gwalior, with 25,000 square miles, to small holdings of only a single village.

Eleven States hold under direct treaty engagements with the British Government, and are known as Treaty States: namely, Gwalior, Indore, Bhopāl, Dhār, Dewās (both branches), Jaorā, Orchhā, Datiā, Samthar, and Rewah.

The *sanad* States, 31 in number, have direct relations with the British Government, but not by treaty. States of this class (except Khaniādhāna in Gwalior) are met with only in the eastern Political Charges. In the early years of the nineteenth century the British Government, during the settlement of Bundelkhand and Baghelkhand, entered into engagements with certain of the chiefs by which, on their presenting a written bond of allegiance (*ikrārnāma*), they received in return deeds (*sanads*) confirming them in the possession of their States, under certain conditions as to powers of administration.

The remaining minor States and estates are known as Mediatized or Guaranteed. Agreements between certain small States and more important Darbārs claiming authority over them were arranged through British mediation. Such States are hence termed 'Mediatized. A 'Guaranteed' holding is one the possession of which is guaranteed under conditions which vary in almost every case. This form of tenure, which is peculiar to Mālwā, arose from the measures taken at the close of the Pindāri War. Mālwā was then in a state of anarchy. The petty Rājput chiefs had been reduced by the various Marāthā powers, but many of them had fled to the hills and jungles, whence they sallied forth on marauding expeditions. To put a stop to this, the larger

States assigned them shares of revenue as *tānka* or blackmail. As a measure of rough justice, the rights existing at the time of the British occupancy were recognized on condition of the maintenance of order, while the relations of such chiefs as owed mere subordination or tribute were adjusted and guaranteed.

In 1862 most chiefs received *sanads* informing them that, on the failure of direct heirs, the Government of India would recognize and confirm the adoption of a successor, in accordance with Hindu or Muhammadan law and custom.

Fuller details of the methods of administration followed in individual States will be found in the separate articles. Most chiefs exercise their authority through a *dīwān* or minister. In Gwalior, however, where there is no minister, a committee called the Sadr Board, composed of the heads of departments and presided over by the Mahārājā, discusses all general measures, and orders are promulgated by a chief secretary. The chiefs of Bhopāl and Rewah are each assisted by two ministers, who respectively control the revenue and judicial branches of the administration. In cases of gross maladministration, or of a minority, the control of the State is vested in the Political officer in charge of the Agency, the direct management in larger States being entrusted to a minister and council working under the guidance of the Political officer. In small States a native Superintendent is placed in immediate charge, acting under the orders of the Political Agent.

The chief representative of the Supreme Government is now styled the Agent to the Governor-General. The following is a list of those who have held the charge substantively: Lieutenant-General Sir John Malcolm, in general political and military charge (1818–21); Residents at the court of Holkar: Mr. Gerald Wellesley (1818–31); Mr. W. B. Martin (1832–3); Mr. John Bax (1834–40); Lieutenant-Colonel Sir Claude Wade (1840–4); Sir Robert Hamilton (1844–54). In 1854 Sir Robert Hamilton was appointed to the newly created post of Agent to the Governor-General in Central India, which he continued to hold for five years (1854–9). He was succeeded by Colonel Sir R. Shakespear (1859–61); Colonel (afterwards Sir) R. Meade (1861–9); Lieutenant-General Sir H. Daly (1869–81); Sir Lepel Griffin (1881–8); Mr. F. Henvey (1888–90); Mr. (afterwards Sir) R. Crosthwaite (1891–4); Colonel (afterwards Sir) David Barr (1894–1900); Mr. C. S. Bayley (1900–5); and Major H. Daly (1905).

The chiefships and estates of the Agency are grouped for administrative purposes into eight[1] Political Charges: the Residencies of Gwalior and Indore, and the Baghelkhand, Bundelkhand, Bhopāl, Bhopāwar, Indore, and Mālwā Political Agencies. Each of these is

[1] Now reduced to seven. In March, 1907, the Indore Agency was abolished, the component States being included in the Mālwā Agency.

under the immediate control of a Political officer, who acts under the orders of the Agent to the Governor-General for Central India, the ultimate control lying with the Government of India in the Foreign Department. The Agent to the Governor-General, who resides at Indore, is the head of the local administration, and exercises through his Political officers a general control over the whole Agency, while he is at the same time the medium of communication between the States and the Government of India. He is also Opium Agent for Mālwā, controlling the large traffic in this commodity in Central India.

The head-quarters staff consists of the First Assistant, who, besides being Chief Secretariat Officer and a District Magistrate and Sessions Judge, also carried on the duties of Political Agent for the Indore Agency, which was directly under the control of the Agent to the Governor-General; an Assistant, who is the Magistrate in charge of the Residency area at Indore, District Magistrate for the Fatehābād-Narbādā section of the Rājputāna-Mālwā Railway, and Deputy Opium Agent, directly responsible for the control of opium passing the Government scales in Mālwā; a native Extra Assistant in charge of the treasury, who is also a District Judge. A Native Assistant is in charge of the vernacular section of the office, and superintends ceremonials.

Legislation and justice.

Jurisdiction over specified areas, such as Residency bazars, cantonments, and railways, has been ceded by the States, and cases in which British subjects of any race or European foreigners are concerned are tried by British courts. The courts authorized to deal with such matters are constituted by the Governor-General-in-Council, who also frames the law to be followed.

All Political officers in charge of Residencies and Agencies are, *ex officio*, vested with the powers of a District Magistrate and Sessions Court under the Criminal Procedure Code, and may take cognizance of cases as an original court without committal by a magistrate. They are also Justices of the Peace. Appeals from Political officers lie to the Agent to the Governor-General, who is, in respect of all offences triable by Political officers, vested with the powers of a High Court and Court of Sessions for the territories under his control, with the proviso that original and appellate criminal jurisdiction in the case of European British subjects resident in Native States, and of persons charged jointly with them, is reserved for the High Courts at Bombay or Allahābād, as ordered.

The Magistrates of the two British cantonments of Nīmach and Nowgong are Magistrates of the first class and District Magistrates under the Code of Criminal Procedure, appeals from their decisions lying to the Political Agents in Mālwā and Bundelkhand respectively. The Cantonment Magistrate of Mhow has similar powers, but appeals

from his decisions lie to the First Assistant to the Agent to the Governor-General at Indore. The officers commanding at Guna and Agar are vested with second-class powers, appeals lying respectively to the Resident at Gwalior and the First Assistant.

The railway magistrates exercise subordinate jurisdiction, appeals lying, as a rule, to the Political Agent through whose charge the section of the line on which the offence took place passes.

Political Agents deal with civil cases only in petty holdings or in such of the larger States as are, owing to the minority of the chief or for other reasons, directly supervised by them. Appeals from the Political officer lie to the Agent to the Governor-General. Appeals from the Cantonment Magistrates sitting as District Judges lie in the case of Mhow to the First Assistant to the Agent to the Governor-General, and in the other two cases to the Political officer of the charge. The railway magistrates are, as a rule, also Judges of Small Cause Courts, and the Political Agents are District Judges.

The powers of the different States in criminal cases vary; but generally speaking full powers of life and death are held by the chiefs of Gwalior, Indore, Bhopāl, Rewah, Orchhā, Datiā, and Samthar; the smaller chiefs, except where special authority is granted, being required to submit all heinous cases to the Political officer. The States usually follow the Indian Penal Code and the Code of Criminal Procedure.

In civil matters either local rules or the old *panchāyat* (arbitration) system prevail. Mutual arrangements have been made for extradition and the service of civil processes between the States and British India, and in the case of all the larger States among the States themselves.

Rules have been framed for the decision of boundary disputes between the States; such cases are decided, if necessary, by a British officer specially appointed for the purpose.

Finance.

The total revenue collected by the States amounts roughly to 428·3 lakhs. Of this, 231·1 lakhs, or 54 per cent., is derived from land revenue and cesses, 26·3 lakhs from excise and customs, and 6·1 lakhs from dues on opium. The normal revenues of individual States vary from that of Gwalior with 150 lakhs, Indore 54 lakhs, Bhopāl 25 lakhs, Rewah 29 lakhs, Dhār 8·7 lakhs, Jaorā 8·5 lakhs, Orchhā 4·5 lakhs, Datiā 4 lakhs, and Ratlām 5 lakhs, to sums of only a few hundred rupees. The States make certain payments to the British Government, for the upkeep of troops and other treaty obligations, amounting to about 6 lakhs a year.

Under the Mughals the right of coining was a privilege granted by the emperors as a special mark of favour, but the privilege was often extorted or assumed during the reigns of the weak successors of Aurangzeb. At the accession of the British to paramount power in the nineteenth century several States in Central India issued their own

coinage. Mints existed at Chhatarpur, Pannā, Sironj, Bhopāl, Sohāgpur (Rewah), Tehrī (Orchhā), Ujjain, Isāgarh (Gwalior), Srīnagar (Pannā), Indore, and Maheshwar (Indore). The closing of the British mints to the free coinage of silver in 1893 was followed by a rapid decline in the exchange value of Native State rupees. As the result of this, all the Darbārs except Orchhā have ceased to coin gold and silver. Many States, however, still issue copper money. Although the British rupee is now legal tender in most places, the old local silver currencies are still met with in bazars, the commonest in Mālwā being the *Sālim shāhi* of Rājā Sālim Singh of Partābgarh (Rājputāna), and in Bundelkhand the *Bābā shāhi* or *Rājā shāhi.*

Land revenue.

Though each State has its own system of land revenue, certain features are common to all. In all cases the State claims sole proprietorship of the soil; and in many States no occupancy rights are allowed to the actual cultivators, at least in theory, though in practice long occupation confers a prescriptive claim to such rights, and even sale, mortgage, and subletting are allowed.

All State land is divisible into three classes. Land held directly by the Darbār is called *khālsa* or *kothār*. This may be managed through a contractor, called a *thekadār*, *ijāradār*, or *mahate*, who receives a lease for two to five years, and is solely responsible for the revenue due on the holding; or it may be classed as *khām*, i.e. managed directly by the State through its own officials. *Jāgīr* land is usually held on a personal service tenure, called *saranjām* in Marāthā States, and dates from the time when every *jāgīrdār* was bound to support his chief, if called upon to do so, with a quota of horse and foot, called *zābta*. This service obligation has been, as a rule, commuted into a money payment. Land is now granted on this tenure to high officials of the State, members of the chief's family, and persons of position, who pay a percentage of the revenue of the holding as tribute, called *barbast* or *tānka*. The rules for the resumption of *jāgīr* holdings and succession on the decease of a holder vary in each State. Such grants were made much more freely by Rājput than by Marāthā chiefs. In some States *jāgīrdārs* have only a life interest, and debts cannot be recovered from their estates after death. The third class is known as *muāfi*, or lands given, as the name implies, as a free grant. These are ordinarily of two kinds: *dharmāda*, granted for religious or charitable purposes; or *chākrānā*, small allotments to palace servants and personal attendants of the chief, pensioned sepoys, and other subordinates. From these grants no revenue is levied, though, in the case of *dharmāda*, certain sums have often to be devoted to the repair and upkeep of temples.

Leases to cultivators, except in States which have been regularly

settled, are almost invariably made for one year only, a *patta* being issued by the Darbār in the case of *khālsa* land, and in the case of other tenures by the *jāgīrdār*, contractor, or other holder. The yearly *patta* appears to be by no means unpopular; and State officials allege that the actual cultivator does not benefit by a long lease, as he will not save, and it simply results in his spending larger sums at marriages, which pass into the hands of the shopkeeper and banker classes.

Systems of assessment of revenue based on those in vogue in British India have been adopted in all the larger States, and in some of the smaller chiefships which have been administered by British officials during a minority. Elsewhere the revenue is assessed in kind by various methods, of which the chief are: *kankūt* or *kūt*, in which the standing crop is appraised just before harvest, and either a produce share taken, or its equivalent in cash; *bhāg* or *kist-bhāg*, in which a share of the crop is taken after it has been gathered in; *hali* or *harankā*, in which a fixed share of the produce per plough of land is taken, a system in force in hilly tracts; *thānsā*, where a rate is fixed between the individual cultivator and the State for a term always exceeding one year, such rate not being subject to remission or enhancement under any circumstances; and *darbandī*, which is not unlike a regular assessment based on the crop-bearing power of the soil.

Revenue is collected in various ways, the commonest methods being either by *theka* or farming as mentioned above, or by the *tīpdārī* or *manotidārī* system. The latter system is very common, and is applied to *khām* land as well as to other classes. The bankers of the State become surety for the revenue of certain tracts, which they finance, making advances of grain and money to the cultivators, and recouping themselves from the revenue. The late succession of bad years has made it difficult to get the bankers to undertake this responsibility. Collections are made, as a rule, four times a year: in the months of Bhādon (August–September) and Aghan (November–December) for the *kharīf*, and in Māgh (January–February) and Chait (March–April) for the *rabi*. When only two collections are made, they take place in Aghan and Chait. States are fully alive to the value of the cultivator, and remissions and suspensions are freely made in bad years.

The actual share of the produce taken varies considerably, ranging from two-thirds to one-eighth, after deducting the amount required to supply seed for the following harvest. The cultivator's share also includes the perquisites of the headman, and of village artisans and servants. The share taken by the State is worth from Rs. 6 to Rs. 40 per acre in the best irrigated land on the plateau, while in 'dry' land the share varies from a few annas to Rs. 5. The hills and lowlands

produce even smaller yields. The actual incidence in selected States is shown below:—

State.	Land revenue assessed per head of population.	Incidence of land revenue per acre, excluding *jāgīr*, *muāfi*, &c., holdings.	
		For total area.	For total cultivated area.
Western Section.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Gwalior	3 4 10	0 11 6	2 7 9
Indore	5 12 5	0 9 7	2 0 7
Bhopāl	3 0 3	0 10 1	2 5 1
Dhār.	5 13 9	0 13 4	2 0 3
Dewās	5 4 8	1 3 1	2 10 5
Jaorā	6 1 8	1 10 0	3 7 3
Eastern Section.			
Rewah	1 1 1	0 2 8	0 12 1
Datiā	5 0 7	0 13 0	2 15 0

Miscellaneous revenue.

Besides the income from opium raised by Native States, which varies from State to State, duty is levied on opium passing into British territory. Abul Fazl mentions that the use of the drug was universal in Mālwā in the sixteenth century, being given even to young children. The local consumption is still considerable, the drug being either eaten or drunk, or, less frequently, used for smoking. There is a large export trade to China, which has been in existence since the sixteenth century, if not earlier, and was long controlled by the Portuguese. When attention was first called to this, the British Government assumed the sole right of purchasing what opium they wished from Native States; and in 1826 an agreement was made with the chief Mālwā States—Indore, Dewās, Jaorā, Ratlām, and others—by which they undertook to limit the area under poppy, to stop smuggling, and to sell their produce to Government at a certain rate. By 1830 the unsuitability of this agreement had become so evident that it was abandoned. The system had raised up a swarm of spies and opium-seizers, whose hands were in every man's house and in every man's cart, till at length opium-carriers armed themselves to oppose opium-seizers, and a sort of civil war arose which was likely to become more extended. At the same time the cultivation was in no way curtailed, while smuggling increased, and the internal trade of the States was disorganized. It was then determined that Government control should commence only when the drug was exported, a duty being levied at certain convenient places. To effect this, Government dépôts have been erected at Indore, Ratlām, Jaorā, Ujjain, Bhopāl, Mandasor, and Dhār in Central India, and at Chitor and Bāran in Rājputāna. They are under the general control of the

Agent to the Governor-General in Central India, who is the Opium Agent in Mālwā, and of an Assistant to the Agent to the Governor-General, who is the Deputy-Agent, the weighments at Indore being supervised by the Deputy-Agent, and at other stations by Assistant Opium Agents. Two classes of duty are levied: an Imperial duty on opium exported to China of Rs. 600 on every chest of 140 lb. weight; and a Provincial duty of Rs. 700 on every chest exported for consumption to places in India, principally Hyderābād State, and some Native States in the Bombay Presidency.

The number of chests passing through all the dépôts under the Opium Agent in Mālwā during the last twenty years averaged 27,500 per annum, yielding a duty of 159 lakhs. In 1904–5, 19,287 chests were passed, yielding a duty of 115·1 lakhs. The export trade to China is apparently declining. The number of chests has decreased from 42,351 in 1860–1 to 36,964 in 1880–1, 25,822 in 1900–1, and 19,287 in 1904–5. The price of opium has risen considerably. In 1814 the average price was Rs. 29 per *dhari* (10 lb.), in 1817 Rs. 33, in 1850 Rs. 44, in 1857 Rs. 56, in 1864 Rs. 62, and in 1904–5 Rs. 72.

No salt, except the small quantity turned out in Gwalior and Datiā, is now manufactured in Central India, and the States receive from the British Government various sums in compensation for the surrender of the dues formerly levied on that article, as detailed in the accounts of individual States. The total receipts amount to about 3·4 lakhs per annum.

The only other important excisable commodity is country liquor, distilled from the flower of *mahuā* (*Bassia latifolia*).

Excise administration varies considerably in different States, but is in all cases defective. The right to the manufacture and vend of country liquor is usually sold by auction to one or more contractors, who are then left entirely to their own devices, or are subjected only to very lax supervision. The number of liquor shops (excluding the States of Gwalior, Indore, and Bhopāl, for which figures are not available) works out to one for every 8·8 square miles and 951 persons, rising in a few individual cases to a maximum of one for every 6½ square miles and 400 persons. The right to sell foreign liquor is usually included in the contract for country liquor, while the right to retail the hemp drugs—*gānja*, *bhang*, and *charas*—is, in almost all cases, sold along with the contract for liquor or opium.

The opium traffic, being a considerable source of income, is more carefully controlled. In most States this drug is subjected to heavy taxation by means of customs, transit, and export dues, and numerous miscellaneous duties. These amount on an average to Rs. 30 on every chest (140 lb.), rising to a maximum of Rs. 50 in the case of Indore.

Municipal self-government is not yet common, but the States of Gwalior and Indore are introducing the system into all towns of any size; Bhopāl, Ratlām, and a few other large towns have either regular municipalities or town committees.

Local and municipal.

Public works in Central India, excluding railways, belonging to the British Government are in charge of a Superintending Engineer, who is also Secretary to the Agent to the Governor-General in the Public Works department. He is assisted by an Examiner of Accounts and two Executive Engineers, in charge of the Indore and Nāgod divisions, with head-quarters at Indore and Nowgong. Imperial roads and buildings in the Gwalior and Bhopāl States, however, are maintained by the Darbārs, while others make contributions towards their upkeep. Each of the larger States employs a European engineer, and great activity is being displayed in the Indore State, especially in the construction of metalled roads. The most important works carried out during the last twenty years are: the Victoria College and Jayājī Rao Hospital at Gwalior and the palaces at Ujjain and Sīprī, the King Edward Hall and Holkar College at Indore, and the Water-works, Lady Lansdowne Hospital for women, and Central jail at Bhopāl.

Public works.

The Agent to the Governor-General formerly controlled three local corps: the Central India Horse, the Bhopāl Battalion, and the Mālwā Bhīl Corps; but in 1897 these were placed under the Commander-in-Chief, and in 1903, except the Mālwā Bhīl Corps (*see* SARDĀRPUR), were de-localized and brought on to the regular roster of the Indian army.

Army.

Central India is included in the Mhow division of the Western Command; and in 1903 was garrisoned by 2,388 British and 4,256 Native troops, in the cantonments of MHOW, NĪMACH, and NOWGONG, and the stations of AGAR, GUNA, SEHORE, and SARDĀRPUR, detachments from these places furnishing guards at the civil stations of INDORE, Sehore, and GWALIOR RESIDENCY.

Besides these regular forces, there are several regiments of Imperial Service troops. Gwalior maintains 3 regiments of cavalry, 2 of infantry, and a transport corps; Indore, a transport corps, with an escort of 200 cavalry; Bhopāl, one regiment of cavalry. These corps are commanded by State officers and supervised by British inspecting officers.

The other troops maintained by the States are numerous, but as a rule little disciplined and armed with obsolete weapons. Some details of their strength and constitution will be found in the articles on the various States.

The volunteers in the Agency chiefly belong to the Bombay, Baroda, and Central India Railway Volunteer Rifles, and to the Great

Indian Peninsula Railway Volunteer Corps; in 1903 they numbered 169 men.

Till recently the police in areas administered by the British Government chiefly consisted of bodies of men enlisted locally and paid from local funds. Along the Agra-Bombay road south of Mhow, the petty Bhilāla chiefs and their followers were responsible for watch and ward in return for certain allowances. In April, 1899, the present Central India Agency police force was raised. It consists of 482 men of all grades, who police the cantonments and stations of the Agency, and is in charge of an Inspector-General, who is also Assistant to the Agent to the Governor-General in the criminal branch. Railway police form a separate body, as usual.

Police and jails.

The States of Gwalior, Indore, and Bhopāl have now regularly constituted police, and most States are reforming this branch of the administration. The systems, however, vary considerably. The village watchman is ordinarily a village servant, and often regular police are not employed, the irregular State troops performing police duties.

The common criminal tribes met with in Central India are Badhaks or Bāgris, who come mainly from Mālwā. Closely connected, if not identical with these, are the Moghias. To lessen the depredations of this clan, settlements have been made in many States, at which land and plough oxen have been allotted for their use. The Moghias are registered, and a careful watch is kept over their movements, regular rules having been drawn up for their control. The principal Moghia settlements are at Mirkābād in Gwalior; Bani and Bodhanpur in Rājgarh; Mughalkherī, Kurārwar, and Halkherī in Narsinghgarh; Dhamana in Kāchhi-Baroda; Kularas in Maksudangarh; Chamāri, Bhāwangaon, and Bichpuri in Khilchīpur. About 7,800 members of criminal tribes have thus been settled in the States of Gwalior, Indore, Bhopāl, Rājgarh, Narsinghgarh, Khilchīpur, Jaorā, Ratlām, and others. Sanaurias are also found, mainly in Bhopāl. The Bhāmpta or professional railway thief has appeared since the extension of railway lines in the Agency. A Kanjar settlement has lately been started at Nowgong. Vir Gopāls and Rāmoshis are only occasionally met with.

The systematic registration of finger-prints has been introduced in most States. A central bureau has been established at the Agency head-quarters, and the Darbārs co-operate in the collection of impressions.

Early in the nineteenth century attention was called by Colonel Sleeman to the widespread prevalence of gang-robbery with violence, especially in Native States. In 1830 Lord William Bentinck instituted a systematic campaign against such crime, Colonel Sleeman being in 1835 appointed General Superintendent of the Thagī and Dakaiti